

GE Appliances

Technical Service Guide

July 2012

2012 GE Dishwasher

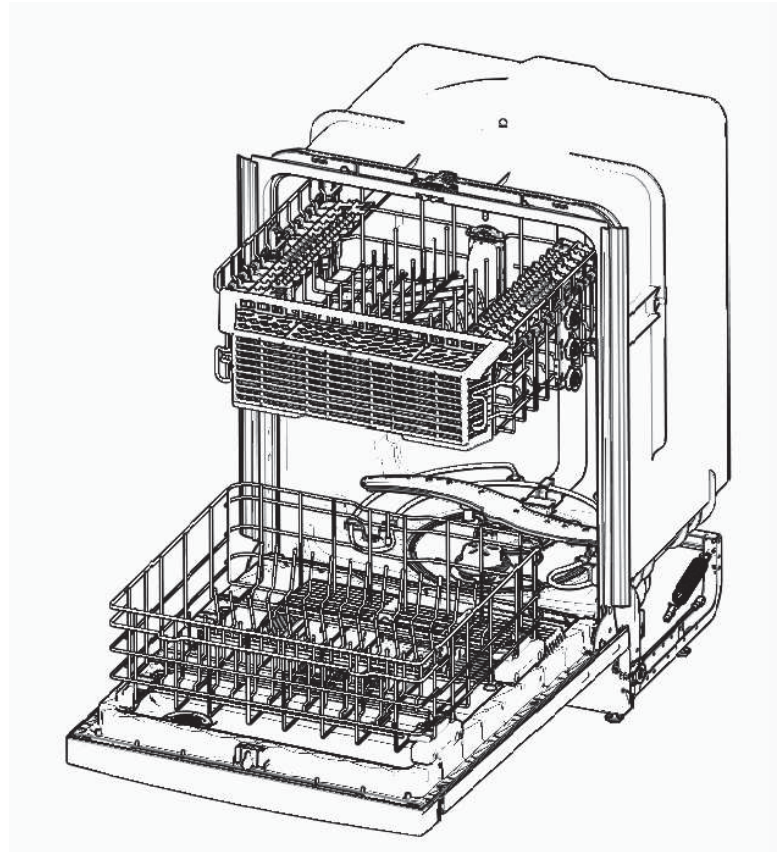
GDF510PGD

GDF520PGD

GDT530PGD

GDF540HGD

GDT550HGD



GE Appliances
General Electric Company
Louisville, Kentucky 40225

31-9226

Safety Information



Important Safety Notice

The information in this service guide is intended for use by individuals possessing adequate backgrounds of electrical, electronic, and mechanical experience. Any attempt to repair a major appliance may result in personal injury and property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

Warning

To avoid personal injury, follow OSHA Lockout Tagout Standard requirements controlling and maintaining a zero energy state. To perform necessary live power electrical diagnostics, electrical safety personal protective equipment (PPE) and barriers must be utilized to comply with OSHA electrical safety requirements.

Reconnect all Grounding Devices

If grounding wires, screws, straps, clips, nuts, or washers used to complete a path to ground are removed for service, they must be returned to their original position and properly fastened.

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Safety Requirements

GE Factory Service Employees are required to use safety glasses with side shields, safety gloves & steel toe shoes for all repairs.



Steel Toed Work Boot



Electrically Rated Glove and
Dyneema® Cut Resistant Glove
Keeper



Dyneema® Cut Resistant Glove



Cut Resistant Sleeve(s)



Plano Type Safety Glasses



Prescription Safety Glasses

Safety Glasses must be ANSI
Z87.1-2003 compliant



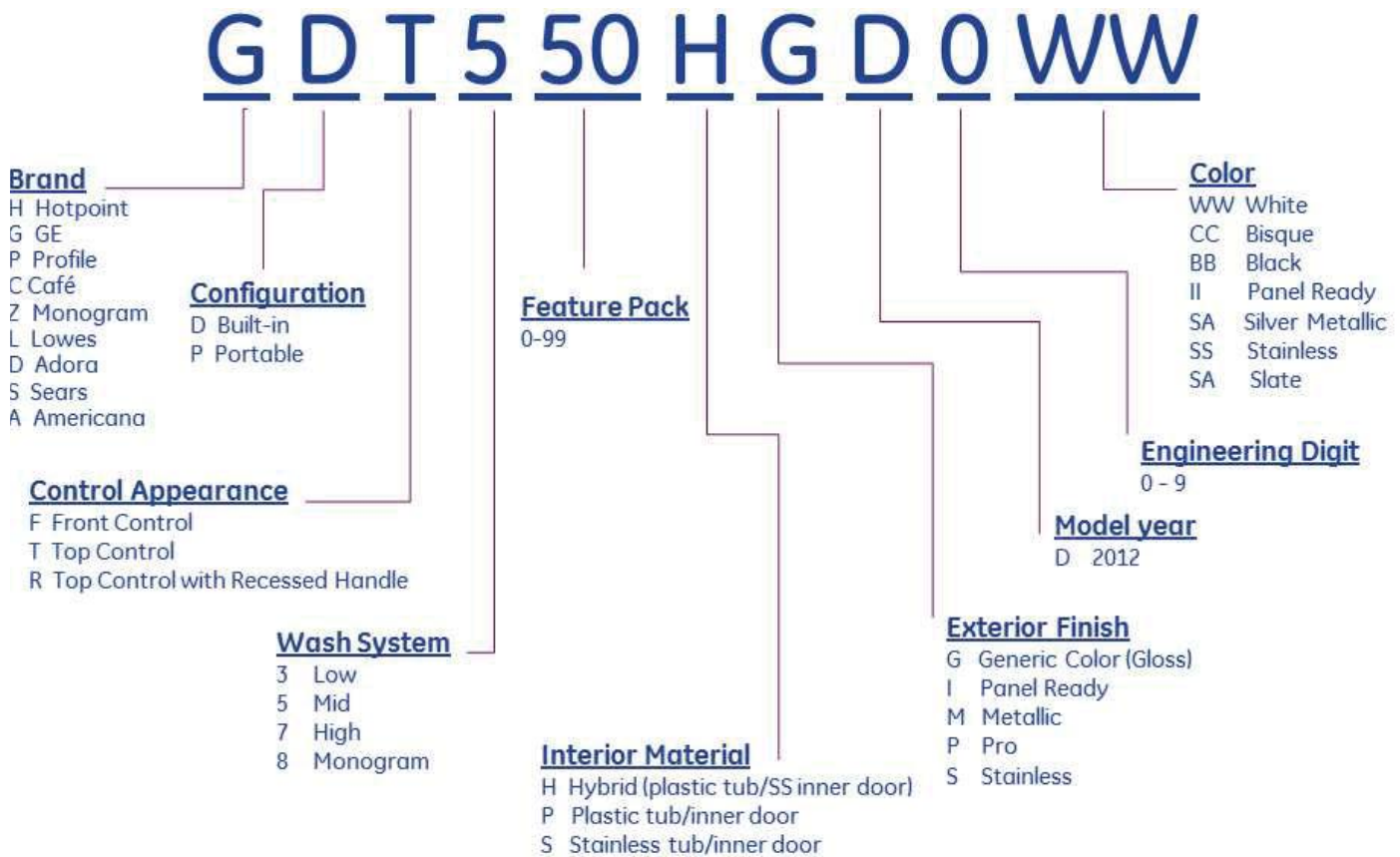
Brazing Glasses

WARNING

Prior to disassembly of the Dishwasher to access components, GE Factory Service technicians are REQUIRED to follow the Lockout / Tagout (LOTO) 6 Step Process:

Step 1 Plan and Prepare	Step 4 Apply LOTO device and lock
Step 2 Shut down the appliance	Step 5 Control (discharge) stored energy
Step 3 Isolate the appliance	Step 6 “Try It” verify that the appliance is locked out

Nomenclature



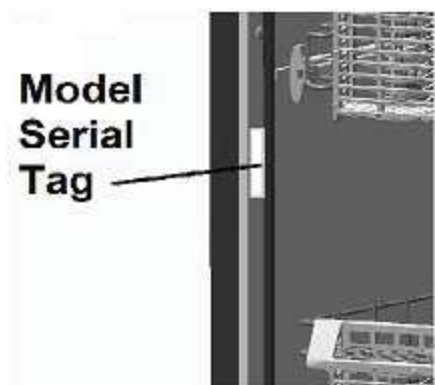
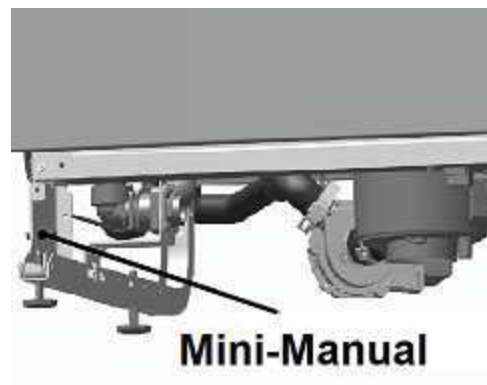
Serial Number

The first two characters of the serial number identify the month and year of manufacture.

Example: LZ123456S = June, 2012

A – JAN	2012 – Z
D – FEB	2011 – V
F – MAR	2010 – T
G – APR	2009 – S
H – MAY	2008 – R
L – JUN	2007 – M
M – JUL	2006 – L
R – AUG	2005 – H
S – SEP	2004 – G
T – OCT	2003 – F
V – NOV	2002 – D
Z – DEC	2001 – A

The letter designating the year repeats every 12 years



Introduction

2012 GE Dishwasher

KEY FEATURES

GE'S MOST ADVANCED WASH SYSTEM

Confidently unload your dishes knowing every item is clean and dry thanks to GE's most advanced wash system featuring 65% more wash power*, three pressurized wash arms, dedicated silverware jets, hard food disposer with removable filter and a 4-pass wash and dry element.

1 PIRANHA™ HARD-FOOD DISPOSER WITH REMOVABLE FILTER

To ensure consistently clean items, this advanced disposer rotates at 3,600 RPM to pulverize food particles. The disposer helps to prevent large particles from clogging the wash arms by breaking them down so they can easily be filtered from the water.

2 3 PRESSURIZED, FULL COVERAGE WASH ARMS

Enhanced performance ensures items are thoroughly washed and table-ready, thanks to wash arms that deliver 65% more wash power to the top and bottom racks compared to previous GE models.*

3 DEDICATED SILVERWARE JETS

Producing table-ready silverware with every wash, powerful jets are specifically directed to multiple locations where the silverware baskets can be placed. This provides loading flexibility and a clean you can count on.

4 4-PASS WASH AND DRY ELEMENT

Items placed in the dishwasher come out consistently clean and dry with the help of this advanced element. It quickly heats water for the optimal washing conditions and heats air to help effectively dry the items at the end of the cycle.

*Delivered separately to the upper and lower racks.

ADDITIONAL FEATURES

1 HYBRID STAINLESS STEEL DOOR

As soon as you open the dishwasher door, you're treated to the elegance and modern style of stainless steel on the area you see most.

2 WASH ZONES

Offering a new level of convenience, Wash Zones make it possible to run a half load in just the upper or lower rack—including 10½" plates and silverware.

3 STEAM PREWASH

Loosens tough soils before any cycle, virtually eliminating the need for soaking or pre-rinsing dishes.

4 SANITIZE CYCLE (NSF RESIDENTIAL)

High-temperature rinse sanitizes and reduces 99.99% of bacteria found on dishes.

5 ADJUSTABLE UPPER RACK

Loading the upper rack with tall items, including plates up to 10½", is possible with a quick adjustment. It's particularly convenient when choosing the Wash Zones feature to run a half wash in the upper rack.

6 EASY ACCESS SILVERWARE BASKETS

Offering ample space for cleaning a large load of silverware and small items, the two baskets are designed to be placed on either the top or bottom rack. No matter where they're placed, dedicated jets ensure table-ready results.

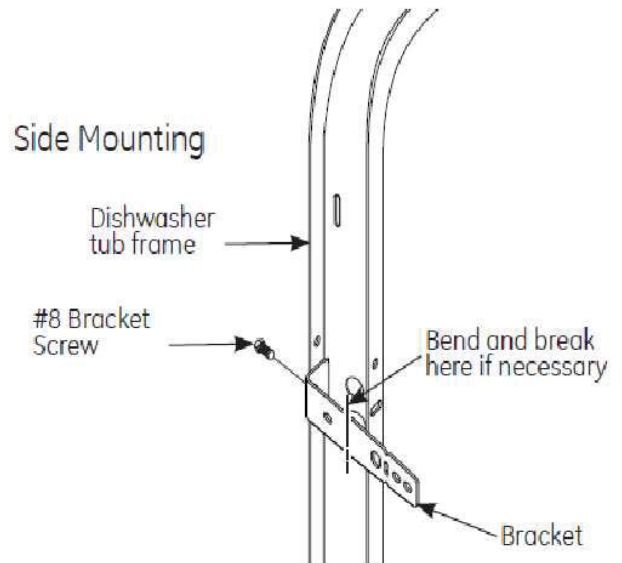
7 SPACEMAKER® SILVERWARE BASKET

Enjoy more flexibility when loading the dishwasher with a specially designed silverware basket that can be placed on the rack or onto the door. Regardless of where it's placed, dedicated silverware jets ensure the silverware is table-ready.

8 WASH YOUR WAY CUSTOMIZABLE RACKS

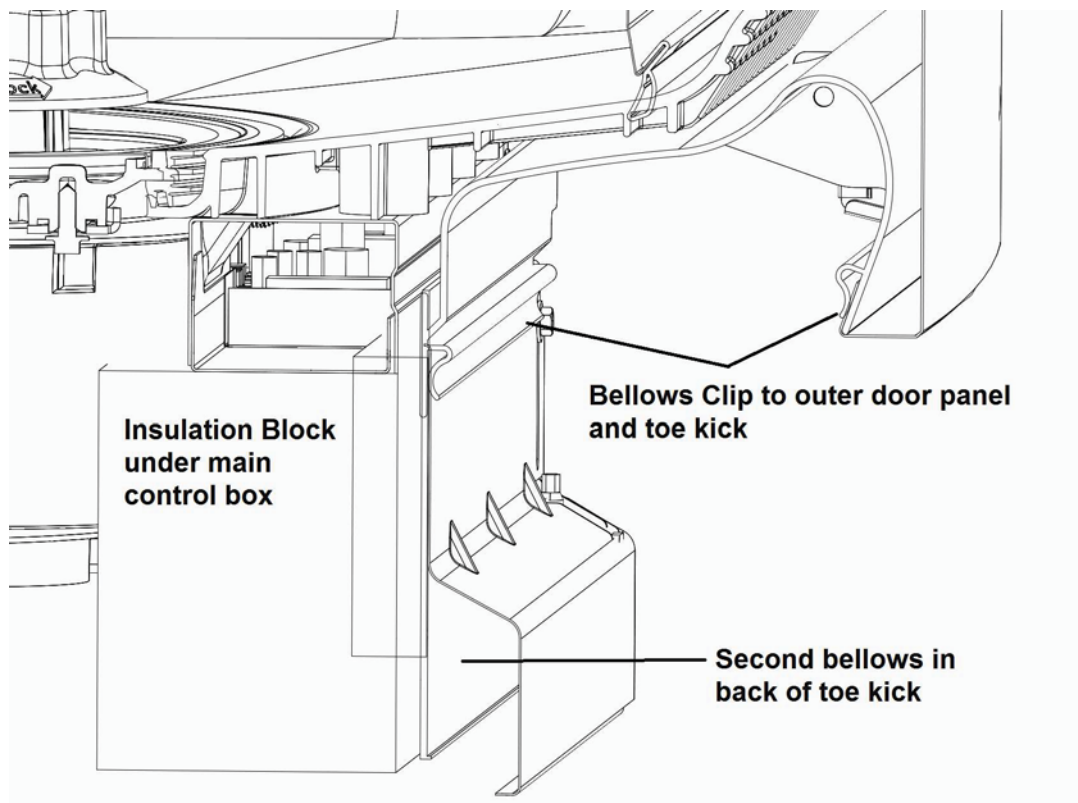
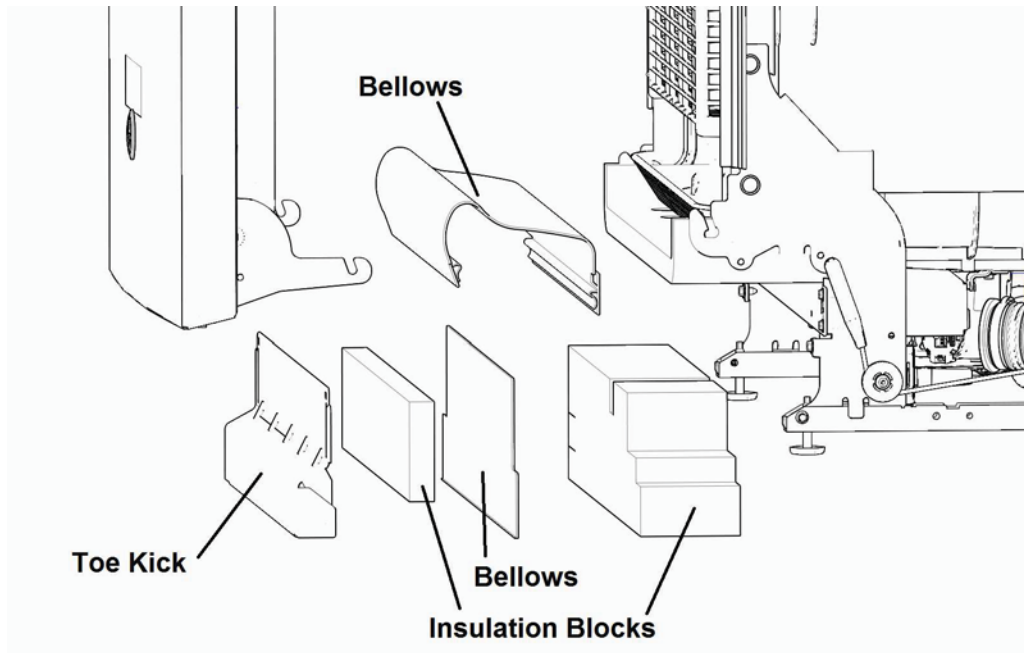
Loading and unloading the dishwasher is effortless because the tines in the lower basket are adjustable. Depending on your kitchen layout, you have the ability to change the direction of the tines in the most comfortable and convenient direction.

Not all features available in all models.



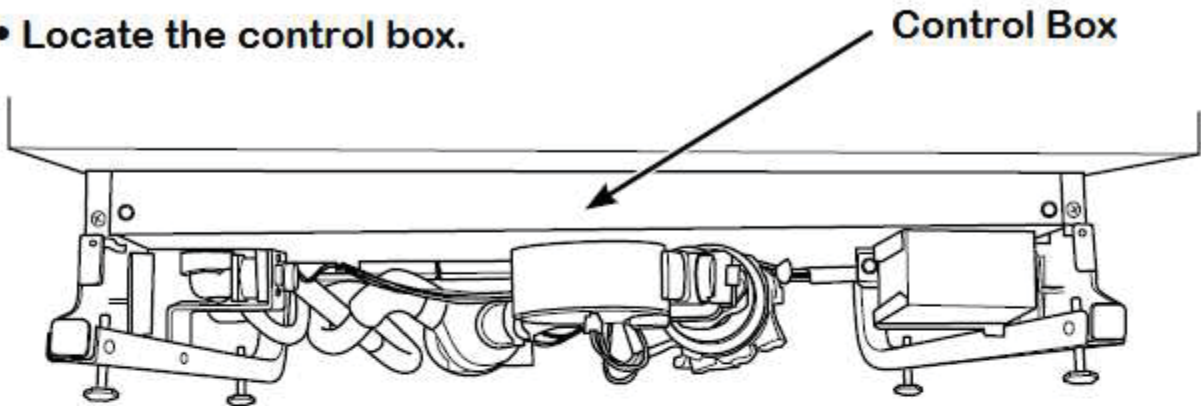
GDT550HGD Sound insulation

GDT550HGD has an upgraded sound package. It includes a sound baffle under the main control box and a bellows at the bottom of the door extending to the rear of the toe kick. Both must be in place for the upgrade to be effective.

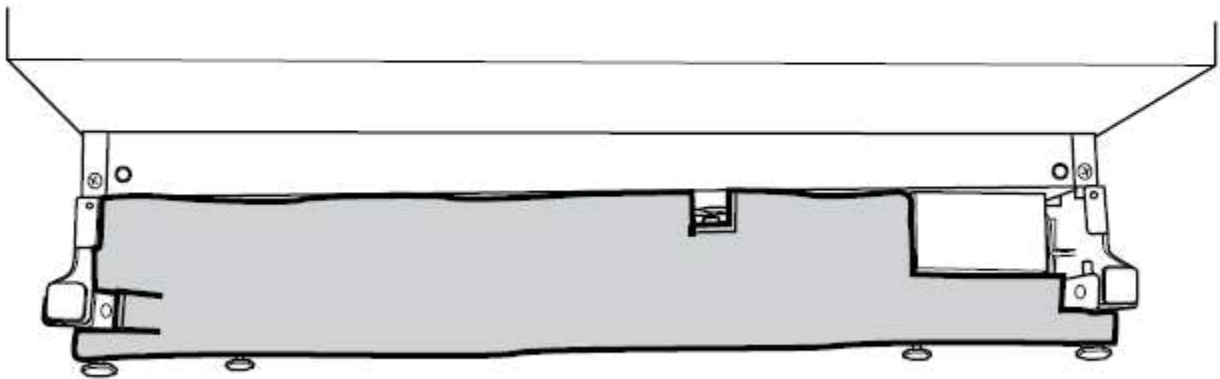


Install Sound Insulation

- Locate the control box.



- Peel off the paper from the insulation.
- Apply the insulation to the underside of the control box and flush with its front face as shown.



Insulation shown adhered to bottom edge of control box, flush with the front face and correctly placed along dishwasher bottom.

There are 2 accessory kits available for 2012 GE Dishwashers, GPFQDCord and GPF12.

- GPFQDCord is a quick disconnect cord which has a connector designed to plug directly to the main control board and a wall outlet in a cabinet located in an adjacent cabinet to the dishwasher.
- GPF12 is a 12 foot long drain hose which is recommended for island installations or where the provided drain hose is not long enough. It is important the drain hose height does not exceed 72 inches. if heights exceed 72 inches, drain problems will occur.

AC Voltage

- Circulation Pump: 120 VAC, .8 amp – 3.8 LRA, 8GPM @ 5PSI
- Drain Pump: 120 VAC, 27 ohms, .65 amp, ~70 second cycle
- Drain Pump TCO 189° F+/- 5° F
- Heater: 120 VAC, 18 ohm wet – 23.4 ohm dry, 6.7 amp wet-5.125 dry, Watts 800 wet /650 dry +/- 5%
- Tub TCO: 120 VAC, 210° F +/- 10° F Manual Reset
- Main Control: input 120 VAC , output 120 VAC and output 5 & 13.5 VDC

DC Voltage

- Door Switch: 13.5 VDC
- Water Valve: 13.5 VDC, 32 ohms, .83 GPM, ~1 minute cycle time
- UI Control: 13.5 VDC (some models have 13.5 VDC output to detergent module)
- Detergent Cup: 13.5 VDC , 32 ohms, .5 second to release detergent cup, 15 seconds to release rinse aid
- Turbidity Sensor: 5 VDC to LED, 10K ohms
- Flood Switch: 13.5 VDC, .42 amp
- Thermistor (in flood switch)

Resistance	Temperature
20K	50° F
11K	75° F
5.8K	100° F
3.4K	125° F
2.1K	150° F
1.3K	175° F

Tools Needed

¼” Nut Driver

R2 Robertson bit

#15 & #20 Torx Bits

#2 Phillips Head

2 — 5/32” Allen wrench’s (or similar size tool, see door removal)

Crescent Wrench

2 — Pocket type screwdrivers

Pliers and Needle Nose Pliers

Volt / Ohm Meter (AC, DC & Ohms) with “Needle” Type Probes

Operation

Control Features

Features and appearance will vary throughout this manual

1

Load Dishwasher

For best dish washing results, follow the rack loading guidelines found in the ***Loading the dishwasher racks*** section. No pre-rinsing of normal food soil is required. Scrape off hard soils, including bones, toothpicks, skins, and seeds. Remove leafy vegetables, meat trimmings, and excessive amounts of grease or oil. Remove acidic food soils that can discolor stainless steel.

2

Add Detergent

Add needed amount of detergent to the detergent dispenser. Use a detergent such as Cascade Complete All-in-1 ActionPacs™. See Detergent ***Dispenser*** in the ***Using the dishwasher*** section.

3

Add Rinse Agent

Add Rinse Agent to the rinse agent dispenser. See ***Use a Rinse Agent such as Cascade® Rinse Aid™***. See the ***Using the dishwasher*** section.

4

Select Cycle

Press the ***Select Cycle*** pad for the desired wash cycle. The light next to the ***Select Cycle*** pad will be on to indicate which wash cycle has been selected.

The cycle may be selected with the door in the open position. The cycle will not start until after the door is closed and ***Start*** selected.

AutoSense (on some models)	This cycle automatically senses the soil level and adjusts the wash cycle accordingly.
Heavy	This cycle is meant for heavily soiled dishes, cookware, pots, or pans with dried-on or baked-on soils. Everyday dishes are safe to be used in this cycle.
Normal	This cycle is meant for normal everyday soil levels and is designed to conserve both water and energy. NOTE: Normal was used to rate the energy efficiency of this dishwasher.
Light	This cycle is for light to medium soiled dishes. It is safe for china and crystal.

Rinse (on some models)	For rinsing partial loads that will be washed later. Do not use detergent. Detergent is not dispensed during the rinse cycle.
----------------------------------	---

5

Select Options

The light by the selected pad will be **ON** to indicate with Option has been selected

Wash Temp Boost (on some models)	This option increases the temperature to help clean heavily soiled dishes and may increase the overall cycle time. Option may be turned On or Off during the wash cycle.
Wash Temp Sani (on some models)	<p>This option raises the water temperature in the final rinse to sanitize your dishware. The cycle length will vary depending on the temperature of your inlet water.</p> <p><i>NOTE:</i> This option is monitored for sanitization requirements. If the cycle is interrupted during or after the main wash portion or if the incoming water temperature is so low that adequate water heating cannot be achieved, the sanitizing conditions may not be met. In these cases, the Sanitized light will not illuminate at the end of the cycle. Utilizing this option will modify the cycle to meet the requirements of Section 6, NSF 184 for soil removal and sanitization efficacy.</p> <p><i>NOTE:</i> NSF certified residential dishwashers are not intended for licensed food establishments.</p> <p>This option raises the water temperature in the final rinse to sanitize your dishware. The cycle length will</p>
Heated Dry Off	Shuts off the heat drying option. Dishes air dry naturally and energy is saved. Open the dishwasher door to speed drying.
Heated Dry On	Turns on the heater for faster drying. This cycle may extend the time to your wash cycle up to 48 minutes. This option is not available with the <i>Rinse</i> cycle.
Steam (Prewash) (on some models)	For use with heavily soiled and/or dried-on, baked-on soils. This option MUST be selected PRIOR to starting the cycle. The Steam option adds approximately 30 minutes to the cycle time. This option is available with Heave , Auto Sense , and Normal cycles.
Wash Zones (on some models)	Selecting either the Upper or Lower Wash Zones will target dish washing of just one rack. This will shorten the cycle time and conserve energy. This option can be used when there is only half a load of dishes.
Delay Hours (on some models)	Delays the start of a wash cycle up to 8 to 12 hours depending on model. Press Delay Hours to select the number of hours, then press Start one time to begin countdown. The cycle will start one allotted time has expired.

Control Lock

You can lock the controls to prevent selections from being made. You can also lock the controls after you have started a cycle to prevent cycle changes. For example, children cannot accidentally start the dishwasher by pressing pads with this option selected.

To LOCK the dishwasher control, depending on the model, press and hold the **Heated Dry** pad for 3 seconds or press and hold the **Steam** and **Wash Temp** pads at the same time for 3 seconds. The Control Lock light will turn on to indicate the control is locked.

To UNLOCK the dishwasher control, depending on the model, press and hold the **Heated Dry** pad for 3 seconds or press and hold the **Steam** and **Wash Temp** pads at the same time for 3 seconds. The Control Lock light will turn on to indicate the control is unlocked.

Energy Smart

When connected to a smart meter and your electric company, the dishwasher will automatically delay starting a cycle during the more expensive peak demand times, and run when demand is low. However, you can override the delay settings and use the dishwasher as needed. Learn more about **Energy Smart** under the **Using the dishwasher** section.

6

Start Dishwasher

Start

Door can be open to select the desired options. Press the **Start** pad and close the door within 4 seconds

to start the cycle or begin the **Delay Hours** countdown. The wash cycle will begin shortly after closing

the door. If the door is open, the illuminated lights will turn off if a pad is not pressed within two minutes. .

To activate the display, close and open the door or press any pad.

Interrupt or Pause

To interrupt or pause a dish cycle, slowly open the door. Opening the door will cause the wash cycle to pause. The dishwasher will beep every minute to remind you to close the door. To restart or resume the cycle, press **Start** and close the door.

Cancel

To cancel a wash cycle, press and hold the **Start** pad for 3 seconds and close door. The dishwasher will drain, emit a beep sound, and the wash cycle light will turn OFF.

7

Cycle Completion

Sanitized

Displayed at the end of the cycle when **Wash Temp Sani (Sanitize)** has been selected and the dishwasher has met the requirements of sanitization. See **Wash Temp Sani** for complete option description. Opening the door or pressing any key while door is closed will turn off the light.

Clean

Displayed when a wash cycle is complete. The light stays **ON** as a reminder that the dishes are clean. Opening the door or pressing any key while the door is closed will turn the light off.

Cycle Chart

The Cycle Chart explains the segments of a cycle (cycles for all models included, cycles depend on the model). It explains what to expect for fill and drain times which depend on either a full or partial drain (see drain section for drain pump algorithm). It provides the circulation time in each segment. this chart does not include dry cycles (see dry section). Times will vary depending on turbidity response.

Cycle Algorithm Comparisons												
Segment Description	Primitive	Diverter Position	Zonal User Over-ride	Calrod	ECO	Speed	Light	Normal Fixed	Normal, Auto (sensor)	Normal+AH Auto +AH (sensor)	Auto Heavy (sensor)	Heavy
Pre Wash 1	Fill (sec)	USA with pulsing	No	OFF	NA	NA	NA	60	60	60	60	60
	Circ (min)							5	5	5	5	5
	Drain							Full	Full	Full	Full	Full
Pre Wash 2	Fill (sec)	LSA with Pulsing	No	OFF	NA	NA	NA	NA	60	60	60	60
	Circ (min)								5.5	5.5	5.5	5.5
	Drain								Full	Full	Full	Full
Pre Wash 3	Fill (sec)	60LSA/60USA	No	OFF	NA	NA	60	60	NA	60	NA	60
	Circ (min)						10	5		5		5
	Drain						Full	Partial		Full		Full
Pre Wash 4	Fill (sec)	60LSA/60USA	Yes Shorten ~30%	OFF	60	60	NA	NA	60	60	60	60
	Circ (min)				10	NA			8	8	8	8
	Drain				Partial	Full			Partial	Partial	Partial	Full
Pre Wash 5	Fill (sec)	60LSA/60USA	Yes Shorten ~30%	ON	NA	60	NA	NA	30	30	30	60
	Circ (min)					5			15	15	15	15
	Drain					Full			Full	Full	Full	Full
Main Wash	Fill (sec)	180LSA/180USA	Yes Shorten ~30%	ON	30	60	60	30	60	60	60	60
	Circ (min)				35	20	40	35	40	45	45	45
	Drain				Full	Full	Full	Full	Full	Full	Full	Full
Post Rinse 1	Fill (sec)	180LSA/180USA	No on Norm/auto; Yes on CU or Heavy	Off	NA	60	NA	NA	60	60	60	60
	Circ (min)					5			5	15	10	15
	Drain					Full			Full	Full	Full	Full
Sani Rinse	Fill (sec)	USA	No	ON	NA	NA	NA	NA	NA	60	NA	60
	Circ (min)									5		5
	Drain									Full		Full
Post Rinse 2	Fill (sec)	180LSA/180USA	No	OFF	NA	NA	60	60	60	NA	60	NA
	Circ (min)						10	5	5		5	
	Drain						Full	Full	Full		Full	
Final Rinse	Fill (sec)	60LSA/120USA	No	ON	60	60	60	60	60	60	60	60
	Circ (min)				15	10	15	15	15	15	15	20
	Drain				Full	Full	Full	Full	Full	Full	Full	Full

On the New 2012 GE Dishwasher, options may change cycle segments

- Sani, is not cycle, it is an option which will add an extra 8 minutes in some rinse cycles and bring the maximum temperature to 155 degrees F. (adding up to 60 minutes to cycle).
- Steam option will change the segments prewash 4 & 5, (changes heater operation).
- Selecting Wash Boost Option will add 5 minutes to prewash 5 and post wash 1.
- USA, Upper Spray Arm. when a number is placed before USA it indicates the approximate time in seconds of operation.
- LSA, Lower Spray Arm. when a number is placed before LSA it indicates the approximate time in seconds of operation.

- Pulsing advises the operation has built in pauses (see diverter operation in the circulation portion of this guide).
- Zonal User Over-ride is the Wash Zone option available on some models. It allows the consumer to select washing in the lower or upper racks. for everyday use, both should be selected. Selecting this option will shorten the cycle up to 30%, there is no change in water use. The motor will still operate as described in the circulation / diverter section of this guide to place the diverter in the proper position and allow for pausing needed in the cycle.

The above chart has maximum segment parameters listed, the control will bypass some rinse cycles if the turbidity sensor detects lower soil than the selected cycle maximum parameter.

Auto Hot Start

If incoming water temp is below 80° F., Auto Hot Start is initiated, this can add up to 3 extra segments at the beginning of the cycle in attempt to purge the home water lines of cooler water.

Cycle Times

Cycle times will vary depending on options selected, incoming water temperature and soil level (some models).

Maximum Cycle Times for Plastic Tub								
		Eco	Speed	Light	Normal	Normal (sensor)	Auto (sensor)	Heavy
All Zones	No options	66	50	85	76	117	127	139
	Heated Dry	123	107	142	133	174	184	196
	Wash Temp Boost	NA	NA	NA	124	132	132	149
	Wash Temp Sani	NA	NA	NA	NA	189	189	206
	Steam	NA	NA	NA	114	118	128	138
	Heated Dry + Wash Temp Boost	NA	NA	NA	144	152	152	169
	Heated Dry + Wash Temp Sani	NA	NA	NA	NA	209	209	226
	Heated Dry + Steam	NA	NA	NA	161	175	185	195
	Wash Temp Boost + Steam	NA	NA	NA	125	133	133	143
	Wash Temp Sani + Steam	NA	NA	NA	NA	190	190	200
	Heated Dry + Wash Temp Boost + Steam	NA	NA	NA	145	153	153	163
	Heated Dry + Wash Temp Sani + Steam	NA	NA	NA	NA	210	210	220
GDT550 1 Wash Zone Selected	No options	61	43	72	NA	92	97	104
	Heated Dry	118	100	129	NA	149	154	161
	Wash Temp Boost	NA	NA	NA	NA	107	107	114
	Wash Temp Sani	NA	NA	NA	NA	164	164	171
	Steam	NA	NA	NA	NA	103	108	113
	Heated Dry + Wash Temp Boost	NA	NA	NA	NA	127	127	134
	Heated Dry + Wash Temp Sani	NA	NA	NA	NA	184	184	191
	Heated Dry + Steam	NA	NA	NA	NA	160	165	170
	Wash Temp Boost + Steam	NA	NA	NA	NA	118	118	118
	Wash Temp Sani + Steam	NA	NA	NA	NA	175	175	175
	Heated Dry + Wash Temp Boost + Steam	NA	NA	NA	NA	138	138	138
	Heated Dry + Wash Temp Sani + Steam	NA	NA	NA	NA	195	195	195

Cycle Temperatures

Incoming water temperature of 120° F — 140° F is recommended for peak performance. The 4 pass heating element quickly heats the water for optimum performance.

Target or Max Temp Limits				
Cycle	PreRinse 5	Main Wash	Post Rinse 1	Final Rinse
Eco	NA	120	NA	125
Light	NA	125	NA	130
Speed	120	130	130	140
Normal	120	125	NA	140
Auto	120	130	NA	140
CU	120	130	130	145
Heavy	125	130	130	145
Heavy+AH	125	135	135	145

Troubleshooting

Diagnostic Error Code Display Mode

Consumers will not be alerted of errors, the control must be prompted into this mode. A technician may enter or consumer may be prompted into this mode as a pre-diagnostic tool only. Door switch operation can be verified in the first 10 seconds of this mode. No load control is programmed into error code mode. Errors are logged and will not stop operation of the dishwasher.

The control will show these errors if detected

- Door switch operation (interactive).
- Alert of minimum water temperature was not met during the last 3 of 5 cycles.
- Alert of a thermistor error.
- Alert of a turbidity sensor error.
- Alert of a communication error between main control and UI control.

Service Mode

Entry of service mode is accomplished while unit is in the error code mode. It allows the technician to control loads or output voltage from the main control board. Service mode allows technicians to operate the following loads to verify operation or to diagnose components.

- Drain Pump
- Water Valve
- Circulation Pump
- Heater
- Detergent Module

Main Control Service LED

The main control board has a service LED. It's function is to aid the technician in properly diagnosing a control problem and providing feedback as to status of the main control. The service LED will indicate:

- Unit is not running a cycle (standby).
- Unit is in a delay start condition.
- Unit is running a cycle.
- Unit is paused.
- Unit is in a cycle completed condition.
- Unit is in a Demo Mode.
- Communication has been lost between main control and UI control.
- Software error.
- No DC power generated by main control.

*Detailed Diagnostics are available in each Section of this Manual.

Displaying Diagnostic Error Codes

Diagnostic Error Code Mode

To enter diagnostic error code mode:

When the dishwasher is in *Standby Mode* (cycle selection mode and not running a cycle), press and hold the **Cycle Select** and **Start** buttons simultaneously for 5 seconds.

Door Status Check:

On entry into the Diagnostic error code mode, the control reports the door status for 10 seconds. If all LEDs are solidly illuminated, the door is detected as closed and if all LEDs are flashing, the door is detected as open.

LEDs Solid	Control is interpreting door as closed
LEDs Flashing	Control is interpreting door as open

Diagnostic Error Codes:

After the door check, the control will enter a mode to display any error codes that are currently detected by the control. If the above LED illuminates, it indicates the error condition is present. These error displays cannot be cleared manually; they will be automatically cleared by the control when the error condition is no longer present. Diagnostic Error mode will time out after 5 minutes.

LED	Error Type	Error Causes
Start	Communications Failure	User Interface control is unable to communicate with the machine control.
Heated Dry	Wash Temperature Error	The minimum wash temperature of 120°F was not reached during 3 of the past 5 wash cycles.
Wash Boost	Thermistor Error	Control is detecting a short or open circuit at the thermistor.
Clean	Turbidity Sensor Error	Control is detecting a short or open circuit at the turbidity sensor.
Lock	Always Illuminated	Illuminates to tell user that <i>Diagnostic Code Display Mode</i> is active.

NOTICE

ANY KEY PRESSES OTHER THEN CYCLE SELECT EXIT THIS MODE.

Service Mode

The **Service Mode** can be entered by pressing and holding the **Cycle Select** pad for 5 seconds from the **Error Code Display Mode**. The control will blink the **Normal LED (Light on Model GDF510PGD0)** every few seconds a number of times that corresponds to the load being tested. To activate the test, press the **Start** pad. Press the **Start** pad to cancel the test, or press the **Cycle Select** pad to cancel the current test and proceed to the next test. If the Start light flashes, the control will begin the test when the door is closed.

Enter Service Mode (can only be entered during Error Mode):

Press and hold the **Cycle Select** pad for 5 seconds.

Press: **Cycle Select** to Select/Increment Test.

Start to Start/Stop Test.

LED Blink #	Load To Control	Timeout / Notes
1	Drain Pump	Attempts to automatically empty tub. Takes approximately 75 seconds from normal level.
2	Water Valve	Attempts to automatically fill tub to normal volume. Takes approximately 1 minute to the normal level.
3	Circulation Pump	Changes spray arm (via changing diverter) every 30 seconds. Runs for maximum of 2 minutes.
4	Heater	Turns heater on for maximum of 2 minutes.
5	Detergent Module	Turns soap dispense solenoid on for maximum of 15 seconds.

Exiting Service Mode:

To exit the *Service Mode* from *Load Control Mode*, press and hold **Cycle Select** and **Start** together 1–2 seconds. Both Error and Service Modes will time-out after approximately 5 minutes.

NOTICE

Error and Service Mode will time out after 5 minutes of non-use.

A consumer should never be directed into this diagnostic mode!

Flashing Lights

Flashing LED's or Display (some models) is an indication the control is waiting for a start command or the door is in the open position. There are no error codes that will automatically display or cause a no run condition. The door switch can be checked in error code mode. If board communications is an issue, look for errors on the main board service LED. All of the above diagnostics are covered in this manual.

Poor Washability

1. Level dishwasher left to right and front to back.
2. Verify presence of air gap and high drain loop.
3. Confirm spray arms turn freely.
4. Confirm spray arm jets are clear
5. Confirm fine filter (consumer removable) has no tears or is clogged (clean or replace as needed).
6. Confirm coarse filter is not warped or clogged and filter vents are not restricted (clean as needed).
7. Clean sump if needed.
8. Check for error codes.
9. Confirm heater operation (use service mode) if not operational check tub TCO.
10. Verify thermistor is within specs (see thermistor chart).
11. Confirm detergent cup operation (use service mode).
12. Inlet water temp should be a minimum of 120° Fahrenheit.
13. Check for proper water fill level (use service mode, see fill section of this guide).
14. Test water hardness with WD01X10295 or WX5X370 test strip. Adjust detergent use accordingly, check Owner's Manual or detergent use instructions.
15. Use high rated detergents, tablets or packs work best. Refer to owner's manual.
16. Use a rinse agent.
17. Load dishwasher per owner manual.
18. Select proper cycle, refer to owner's manual.
19. Confirm Wash Zone setting on model GDT550 is set to both upper and lower zones.

Water on Floor

- Check tub gasket.
- Check door gasket.
- Check sump module & seal.
- Check wash and drain pump.
- Check wash and drain pump hoses.
- Check fill valve and hose.
- Check fill funnel seal.
- Check fill funnel for plastic flash.

Noise

- Door
 - Check for hinge noise or interference.
 - Check for spring or cable interference or damage.
 - Is Door hitting cabinets?
 - Check for worn or damaged roller.
- Wash Noise
 - Are spray arms hitting dishes or racks, baskets etc.
 - Wash motor pump noise, remove and clean or replace as needed.
 - Check for correct water level.
 - Wash motor will cycle on and off as it alternates spray arms (see Circulation Section for details).
- Drain Noise
 - Check for correct drain hose installation.
 - Foreign mater in drain pump, remove and clean or replace as needed.
 - Check for drain hose system vibration.
 - Drain motor will cycle during drain (see drain section for details).

The below noise explanations are covered in the Use and Care Book.

Noise Normal Operating Sounds:

Detergent cup opening.

Water entering dishwasher.

The wash motor stops and starts at various times during the cycle.

Spray arms start and stop at various times.

Drain pump sounds during pump out.

Drain pump starts and stops several times during each drain.

These are all normal. No action required.

Dishwasher Does Not Start

- Check voltage input to the dishwasher.
- Verify door switch operation (error code mode).
- Start pad must be pressed within 5 – 10 seconds of closing the door (Safety Feature).
- Check main board service LED (see main board diagnostics).
- Verify unit is not in demo mode(see service LED in the main board diagnostics).

Symptom: If the start button *either* does not respond *or* it makes a triple beep sound *every time its pressed* **AND** all other buttons respond as normal.....

Diagnosis: The unit may be in demo mode.

Cure: To exit demo mode hold “START” and “HEATED DRY” for 5 seconds.

Service LED

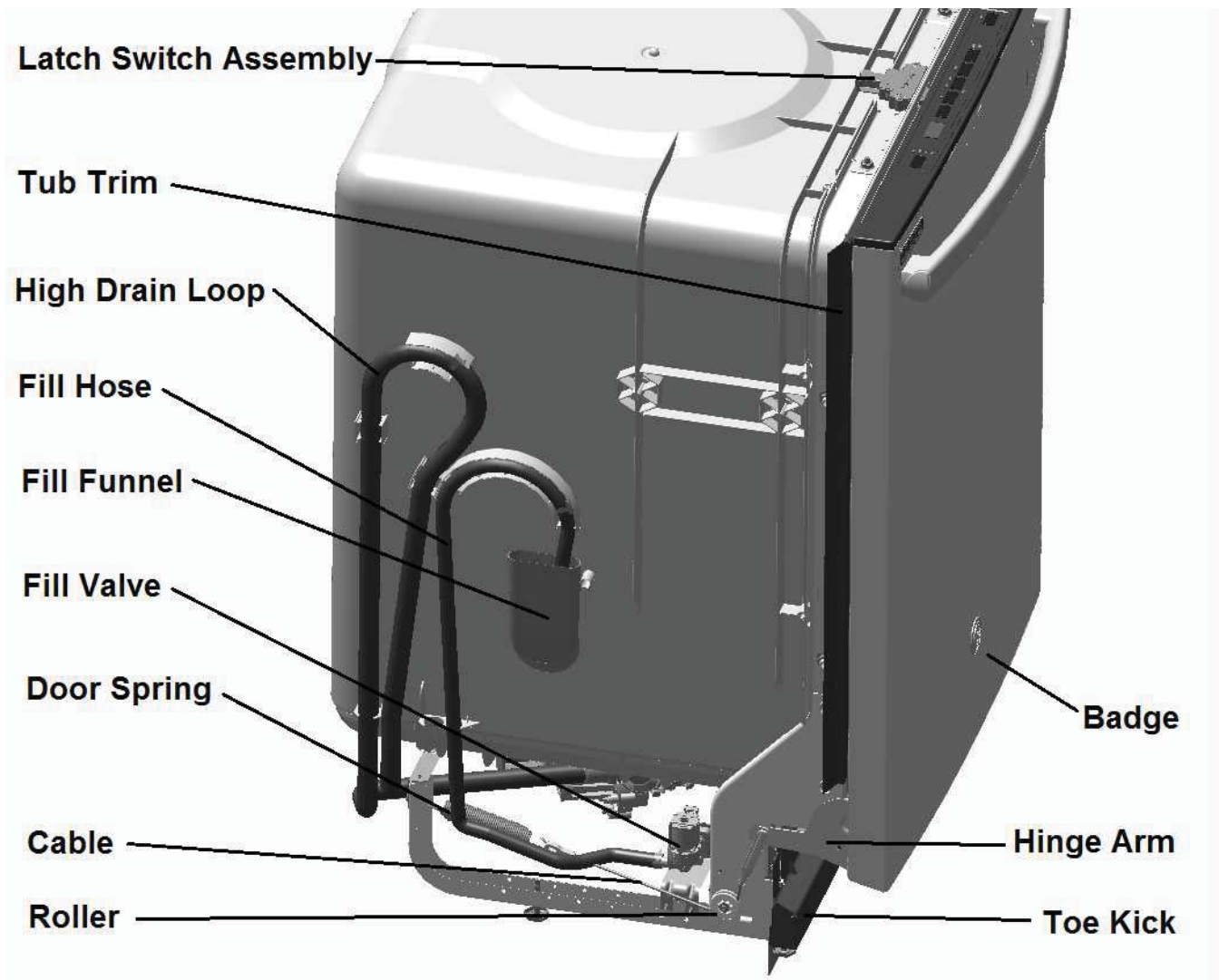
The Service LED is located on the main control board. the control will need to be dropped to service position to observe the LED. The service LED will advise of the control status, communication or software problems. for full details see the main control board diagnostic section of this guide.

Component Locator Views

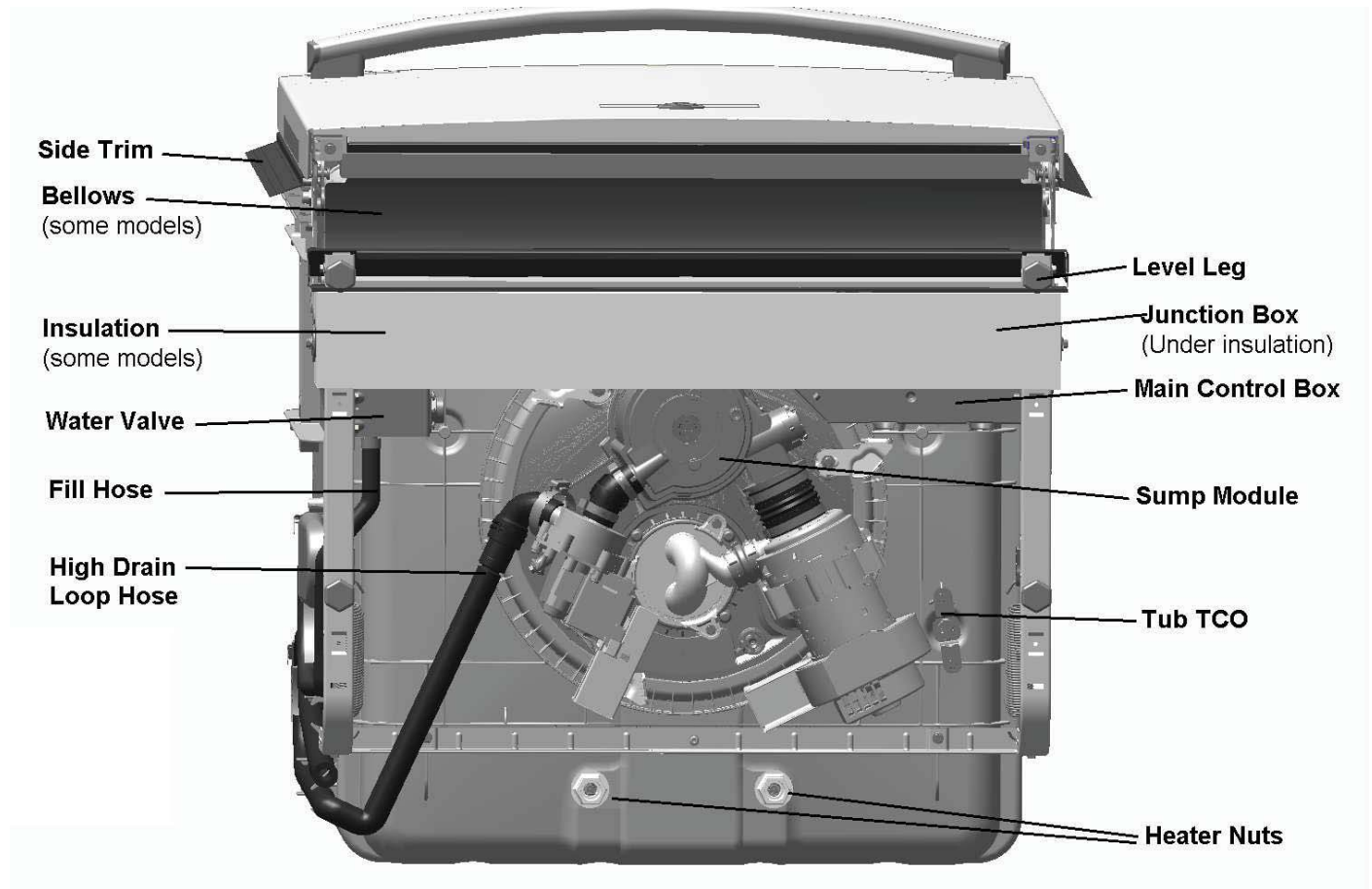
Front View



Side View

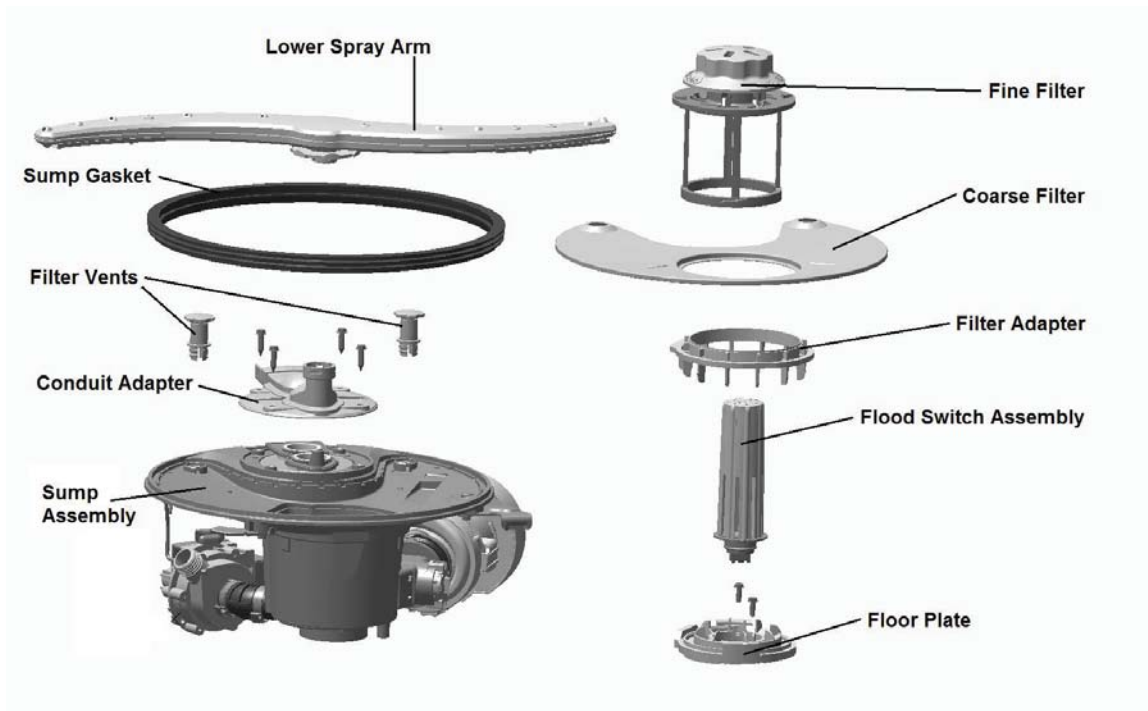


Bottom View

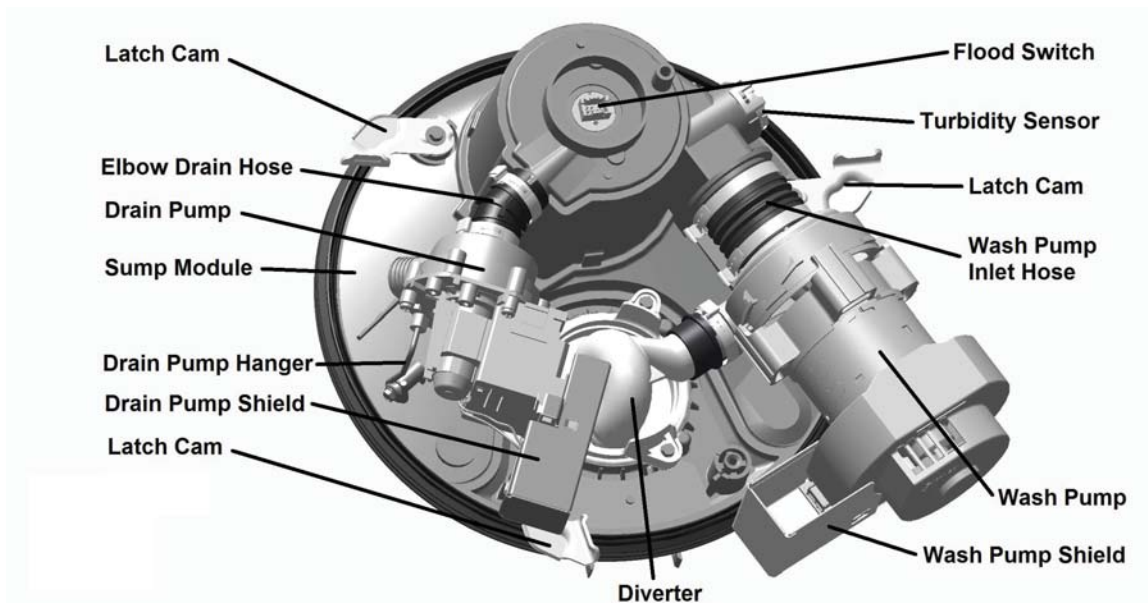


Wire Harnesses are available as service parts, check parts lookup screens for correct harness needed. Door harness, AC harness (includes heating element, wash pump and drain pump, included in this harness is a drain pump TCO). Also available is a DC harness (includes door latch assembly wiring, flood switch, water valve and turbidity sensor wiring on some models).

Sump Components, Top



Sump Components, Bottom

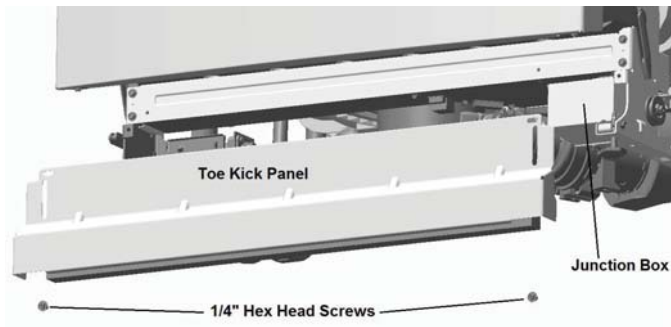


Tub and Structure

The Tub and Structure section of this guide will cover leveling, door balance, racks, toe kick, junction box, main control board, door, door components, removing and separation of the screw less appearance door as well. It also details the sump module and removal, details of the sump components will be covered in the circulation or drain sections of this guide.

Toe Kick

Remove 2 – 1/4 " Hex head screws



GDT550 Sound insulation

On the GDT550 model only, there is a sound upgrade which makes this unit very quiet. it includes extra insulation and a 2 piece vinyl bellows (also see Install info earlier in this guide). The bellows is clipped to the outer door panel and to the top of the toe kick. The second part of the vinyl bellows is attached to the back of the toe kick. There is also an insulation block attached to the underside of the toe kick.

It is important to have the bellows on top of the 'tab' on the offset leg assembly.



The bellows is a stiff vinyl and can be pulled from above and tucked back into place when the door is going to be removed.



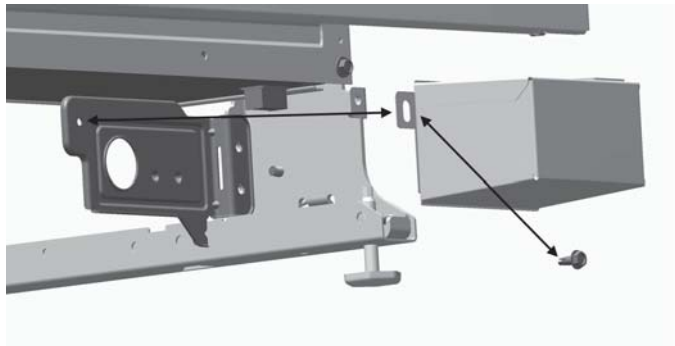
The first 3,000 GDT550 models produced will be a one piece bellows design. the bellows will be taped to the inside of the outer door panel, (routing the same was as the 2 piece) and then behind the toe kick. To aid service of door removal, main control, water valve etc., remove the toe kick pull the bellows out from the bottom and bring it around to the front, taping it to the front of the door.

Junction Box

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair

The Junction Box is located behind the toe kick on the right hand side of the dishwasher. It houses the home electrical connection to the dishwasher. The 120 VAC supply connection can be made with the harness that comes with the dishwasher which connects to a hard-wire type install or an optional quick-disconnect cord, GPFQDCord (available separately) which plugs into a wall outlet and also plugs into the control (see installation guide). The cover is held in place with a 1/4" hex head screw on the left side and tab on the right side. to remove the cover, remove the screw and pull out and to left to release the tab.

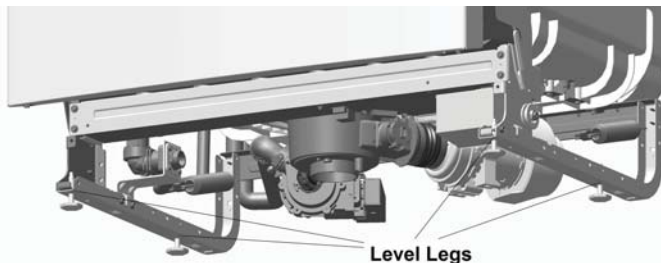


⚠ WARNING

All Ground Wires Must be Securely Attached

Leveling Legs

There are 4 leveling legs located on the base rails of the dishwasher. To access the level legs, remove the toe kick. To raise the dishwasher turn the level legs counter clockwise.

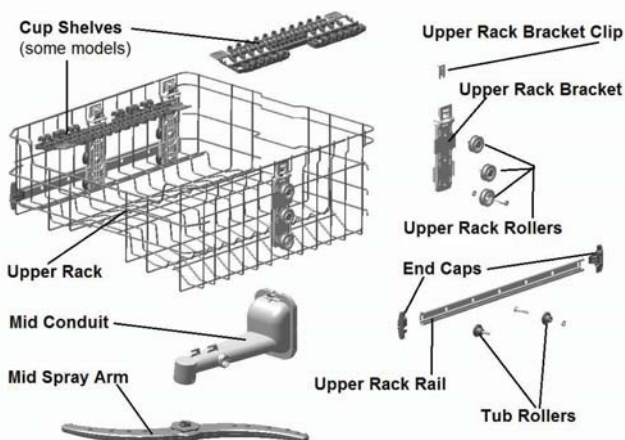


To replace a level leg, the dishwasher will have to be de-installed and placed on it's back.

As with past models, if the base rail level leg holes strip, use 2 nuts WE2x278D (package includes 1 dozen nuts) to act as jam nuts above and below the base rail.



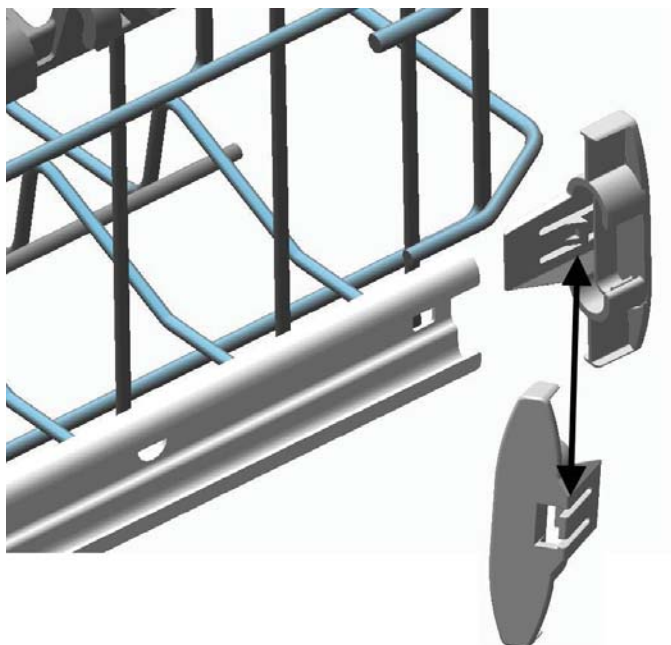
Upper Rack



Adjustable and standard upper racks are available (depending on model, adjustable is shown).

Models with non-adjustable racks will have 2 rollers per bracket instead of 3 rollers on the adjustable rack.

To remove or adjust Upper Rack the Rail End Cap must be removed. Press the tab inward or to the center of the dishwasher and pull the End Cap out. Rack may now be placed in either upper or lower position. (See Use and Care Book).

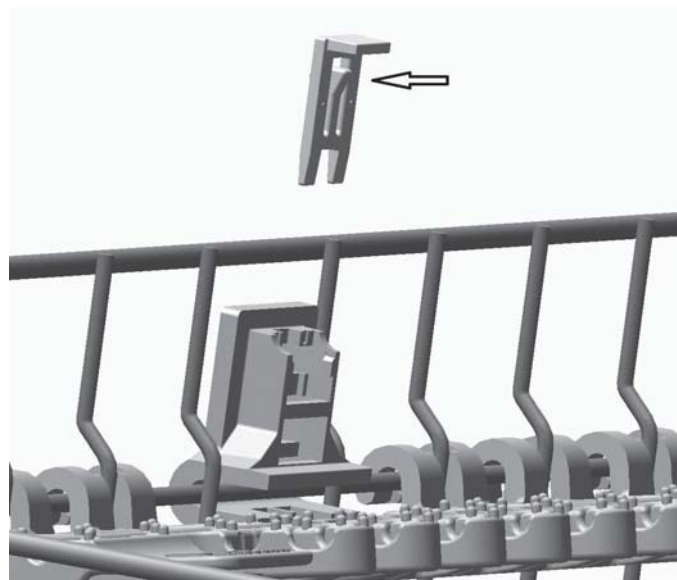


A T-20 Torx is required to remove Rack and Tub Rollers

To remove the Roller Bracket from the Upper Rack

1. Remove the rack assembly from the dishwasher.

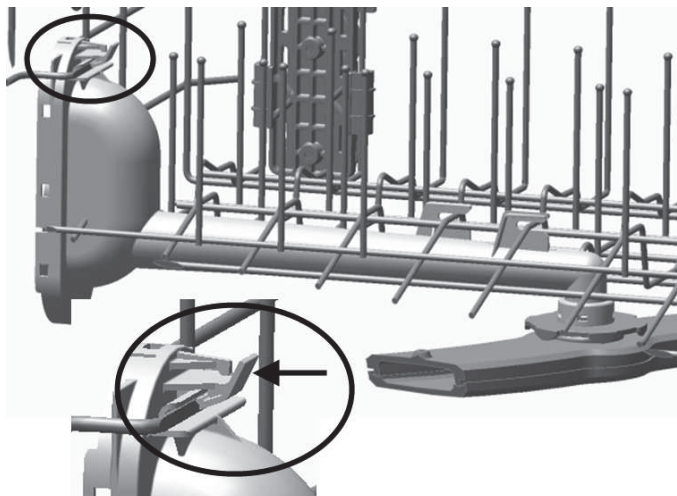
2. Remove the clip securing the bracket to the rack by pressing the tab and lifting the clip from the bracket.



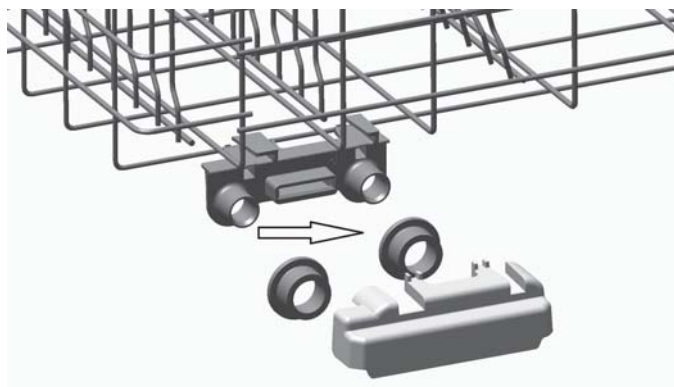
3. Push the bottom of the bracket into the rack.
4. Turn to remove the bracket.



To remove the Mid Conduit assembly, push back on the tab and slide the conduit off the upper rack



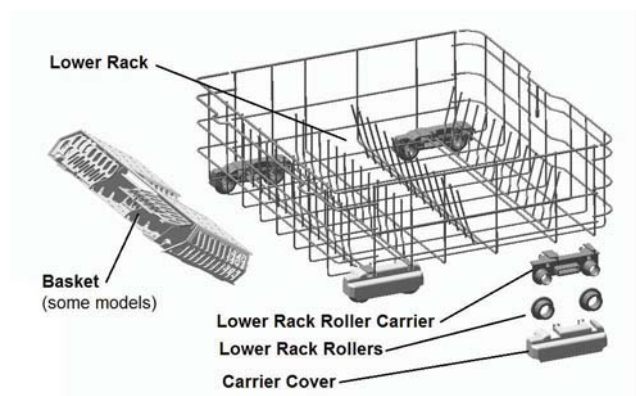
To remove the Lower Rack Roller system, release the tabs by pulling the Carrier Cover up. Rollers can be removed with the cover removed. The Roller Carrier can now be slid off the Rack.



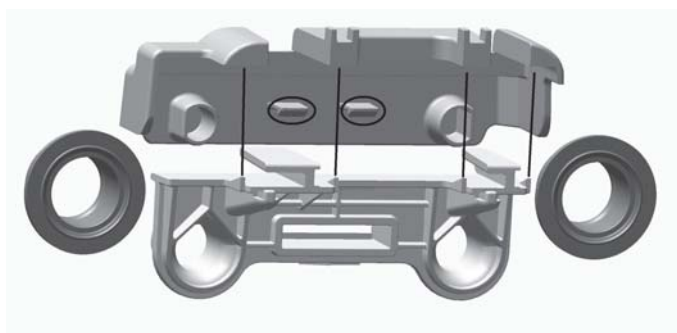
Silverware Basket may be attached to the Inner Door (some models) or hung on the front of the Lower Rack (See Use and Care Book).

Some models have adjustable / removable tine configurations (See consumers see Use and Care Book).

Lower Rack



The Lower Rack Roller Carrier assembly is clipped to the rack and secured in place with the Carrier Cover.



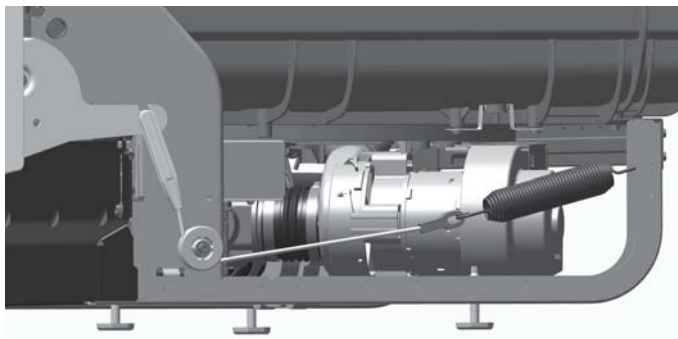
Reversible and Fold Down Tines

Some models have Reversible Tines, allowing the user flexibility as to direction dish ware fits in the lower rack. Some models have fold down tines which allow the user to fold down and place large bowls, pots and pans without bending or damaging the racks. Complete details for these features are available in the use and care book.

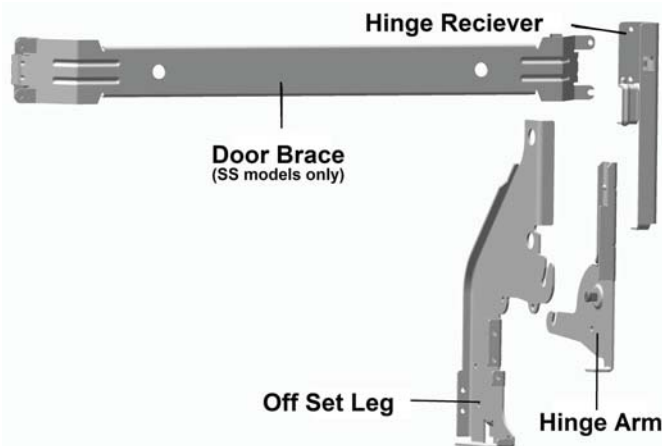


Door Springs and Hinges

The door balance system is comprised of Springs, Cables, Rollers and Hinge Arm. The spring is adjustable as it attaches to the rear of the leg base assembly. There are 4 holes in the leg, higher on the leg, causes more tension on the spring.



The hinge system is comprised of offset legs (part of the tub and structure system and not a replaceable part), hinge arms, receivers / support brackets and on SS inner door models a door brace.



The Hinge System allows the door to be removed while the dishwasher it is installed. Information on door removal can be found in the door section of this guide.

NOTICE

The first 2012 GE Dishwashers produced (July and August serial numbers start with MZ & RZ), will have spacers to ensure proper height of the door and interaction of door strike to the latch assembly. During the Month of August (serial RZ) change in production will eliminate the need for these spacers. This change will be on all units produced in September (serial SZ) and after.

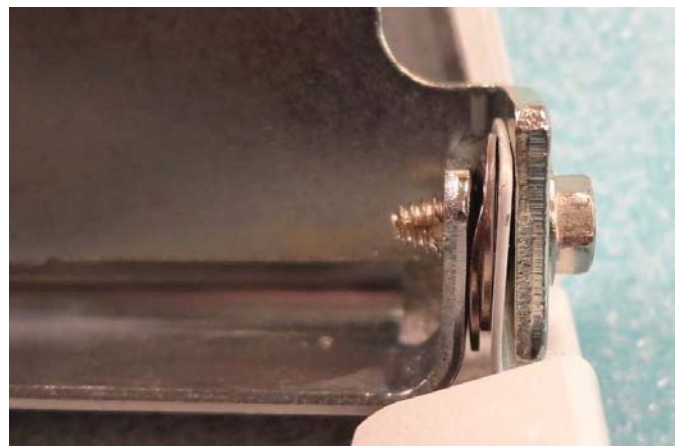
Spacers shown out of Door (2–3 each side)



Spacer(s) shown in proper location, between hinge receiver and outer door panel.

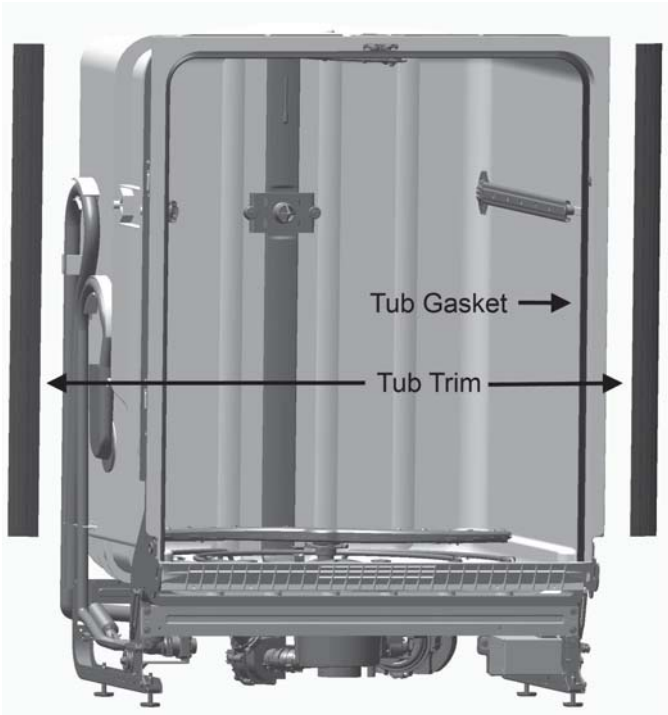


Completed assembly, showing hinge receiver, outer door panel and hinge arm.



If a unit is found to not start and door switches will not close (use Error Mode to detect) the spacers may be missing. Door will have to be removed to verify.

Tub Gasket and Tub Trim



The Tub Gasket seals the top and sides of the door to the tub, the retainer is molded into the PermaTuf® Tub. The seal pushes into the retainer area of the tub. There is a rib also molded into the tub to provide a proper position end point for the gasket.

To remove: pull the gasket from the retainer area.

To reinstall, push the gasket into place starting with the center. The gasket has a center mark and should align to the center of the latch area. The gasket should end touching the stopping point



Tub Trim (some models)



There are 2 strips, one on each side, they serve 2 purposes. The most important is a sound barrier, and the second is appearance when the door is opened. It slides onto the tub and collar assembly.

Door

The Door has DC voltage only and has a screwless appearance. The door contains a User Interface Board with all tactile switches on the board. Some models have a 7 segment display, others have LED indicator lights. The door also houses the detergent module, bottom door seal and a passive venting system (see dry section).

To remove Door

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair

1. Remove power to the dishwasher.
2. Remove toe kick.

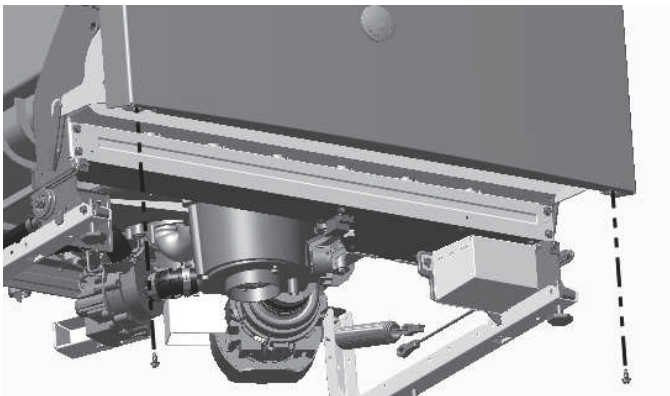
3. Disconnect door wire harness at the bottom of the main control cover.



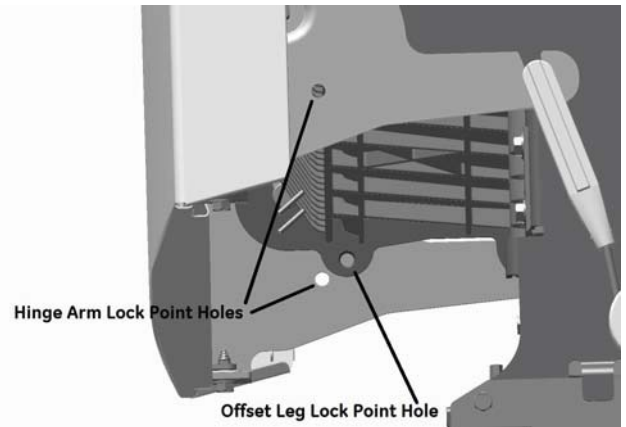
4. Release the 2 wire ties holding the harness to the tub.



5. Remove 2 — 1/4" hex head screws at bottom of door.



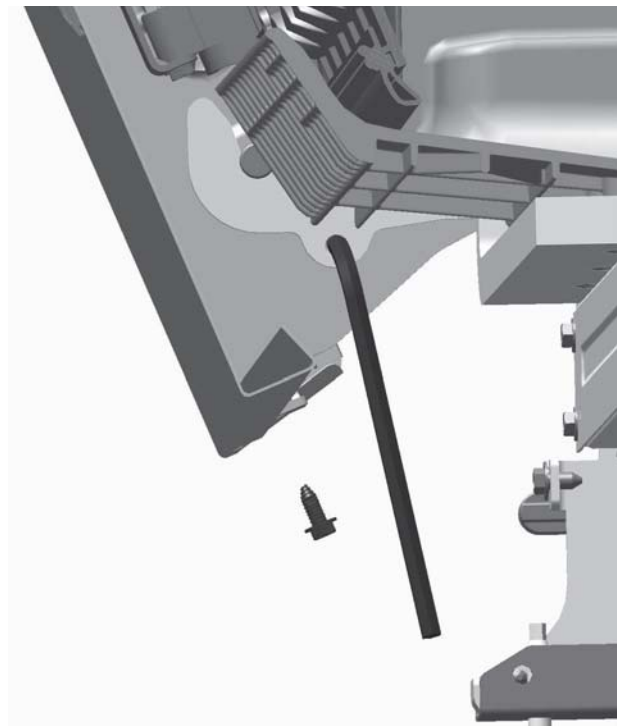
6. Locate hinge pin locking point hole in the offset leg assembly.



7. Insert a 5/32 Allen wrench (or similar size tool) through this hole, gradually open door to 27° and continue to insert the Allen wrench through both the offset leg and hinge arm, until locking of hinge has completed.

NOTICE

Using a smaller diameter tool will not properly lock the hinges and difficulty will be experienced.



8. Repeat the last step on the opposite side..

NOTICE

The first 2012 GE Dishwashers produced (July and August serial numbers start with MZ & RZ), will have the Hinge Lock Point at approx. 20°. During the Month of August (serial RZ) change in production will change the hinge lock point angle to approximate 27° angle to allow easier door removal when units are installed true flush or an extra deep countertop is used. This change will be on all units produced in September (serial SZ) and after.

9. Lift door up approximately 3 Inches.



10. Tilt door in (vertical).



11. Lift door off unit.



When reinstalling the door, let the door hang vertical as you start to guide the door onto the hinge arms. As the door drops approximately 2 inches, let the top of the door fall towards you and it will drop into place.

Inner Door Vent Cover

Must be removed to separate top control doors.

Must be removed to remove front control consoles.

⚠ WARNING

Use care to prevent damage to the inner door

1. Insert 2 pocket style flat blade screwdrivers into vent

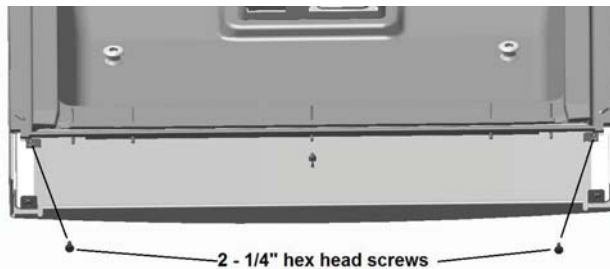


2. Turn counter clockwise to remove
- To separate door:**

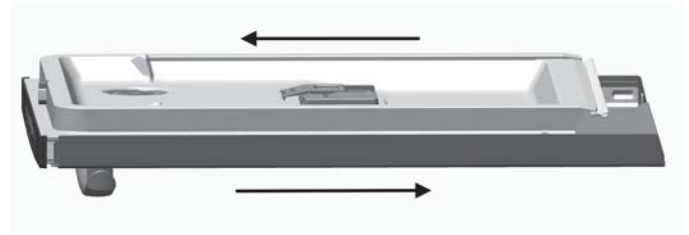
NOTICE

Potential Ergonomic Risk: GE Factory Technicians must utilize good body position when disassembling the door. Keep the back straight and do not bend over at the waist.

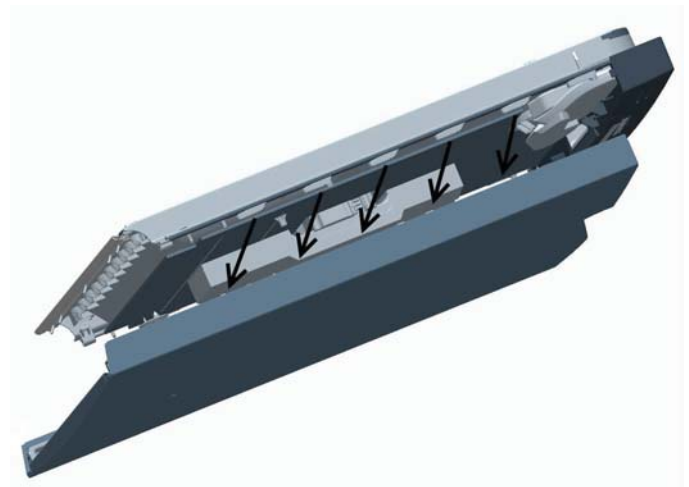
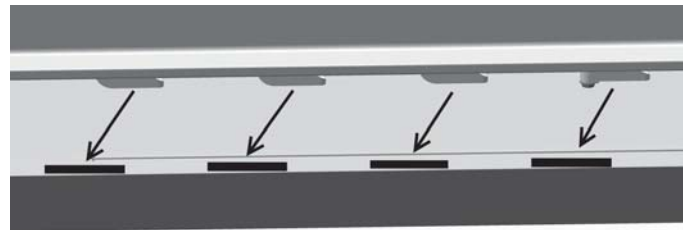
1. Remove door.
2. Place door on protected surface to prevent damage.
3. Top control units: remove the vent cover from the inner door panel.
4. Remove 2 — 1/4" hex head screws.



5. Slide the outer door panel away from the console or control panel.

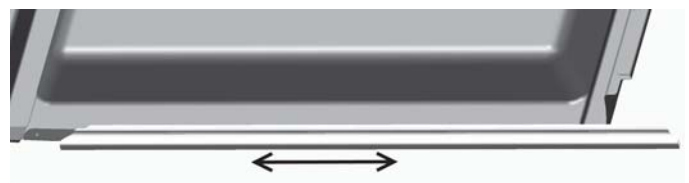


6. Lift to separate inner and outer door panels.



Door Gasket

- For Stainless Steel Inner Door the SS inner door panel has the door gasket riveted to the panel. Inner Door Panel must be replaced to replace the door gasket.
- Plastic inner door panel has a removable gasket.
 1. Remove door.
 2. Slide the gasket either direction to remove, door does not need to be separated on plastic inner doors.



Detergent Module

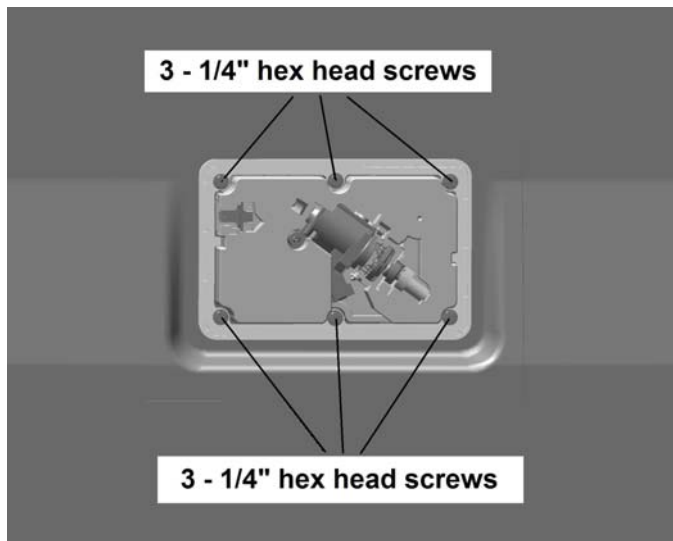
The detergent module is Solenoid operated, using 13.5 Volts DC to power the solenoid.

The 4 button control will send the 13.5 volts DC from the main control under the unit.

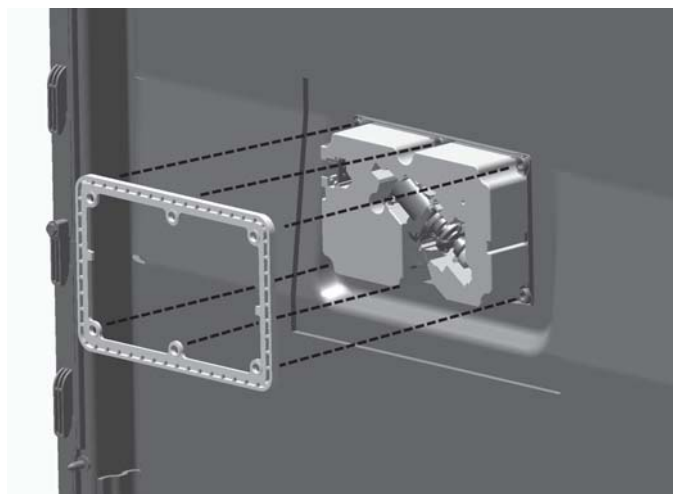
6 button and top control units will send the 13.5 volts DC from the UI board in the door. The module receives 13.5 volts DC for 1/2 seconds to activate the detergent cup. To activate the rinse aid the module receives 13.5 volts DC for a period of 15 seconds.

To remove the Detergent Module

1. Remove power to the dishwasher.
2. Remove and separate door.
3. Remove 6, 1/4" hex head screws.



4. Mounting plate removes from inside the door.



5. Detergent module can now be removed from the inner door panel.

To Diagnose GDF510 Detergent Module

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

1. Remove power to dishwasher.
2. Remove toe kick panel.
3. Disconnect door harness.
4. Use ohm meter to check resistance on the door harness or connector J721 (on bottom of board) pins 2 AX (aqua) — 4 CW (brown/white).
5. 32 Ω (see Main Board connector and pin section in this guide).

To Diagnose GDF520, GDT530, GDF540 and GDF550 Detergent Module

1. Place the unit into Service Mode to check operation.
2. Remove Power, Remove and Separate Door.
3. The Inner Panel can be set into the unit and latched in the closed position.
4. Re-apply power.
5. Place into Service Mode to check for 13.5 volts to the detergent module.

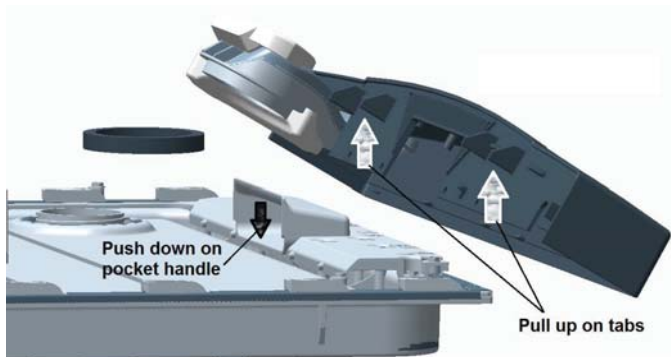
Front Control Door Console

The Front Control Console is held in place by 4 tabs on the recessed door handle.

To remove:

1. Remove and separate inner and outer door panels.
2. Remove the vent cover from the inner door.

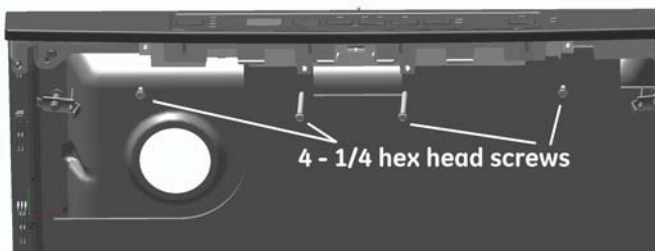
3. Push down on pocket handle, lift up and away from the console on tabs to release console from pocket handle.



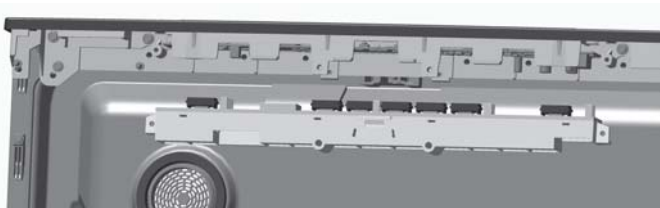
4. Tilt the bottom upward, when both sides are released, rotate the console to release the tabs at the top of the console.

Top Control Door Control Panel

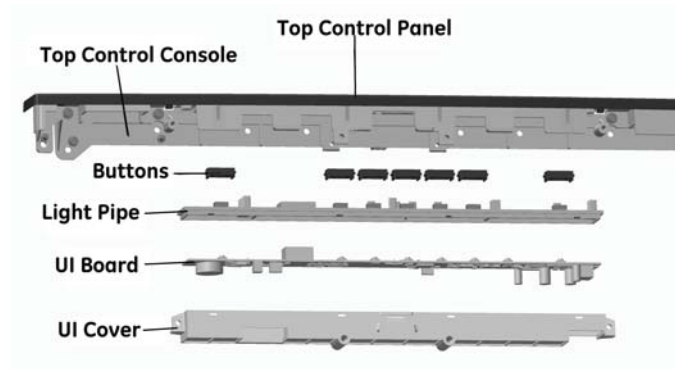
1. Remove and separate door.
2. Remove 4 – 1/4 " hex head screws.



3. Control and cover will drop down from control panel.



4. Buttons, light pipe with silicone pad and UI board can be removed from cover.

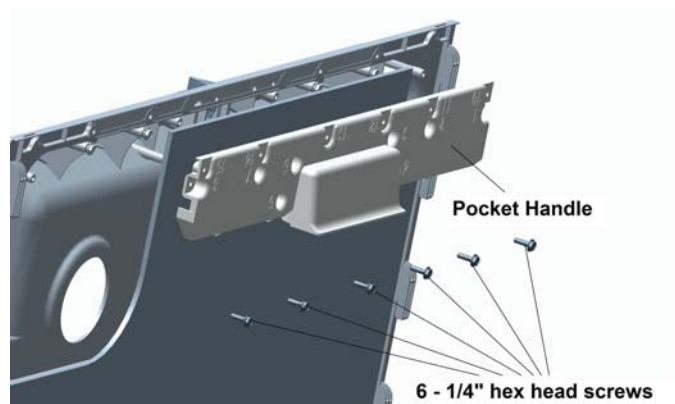


Pocket Handle

Pocket handle is attached to the inner door panel

To remove:

1. Door must be removed and separated.
2. Remove console or control panel.
3. Remove 6 — 1/4" hex head screws.



4. Pocket handle is clipped to plastic inner door and on the adapter of SS inner doors.



Bar Handle

The Bar handle is attached to the outer door panel. The handle is an assembly with end caps pre-attached

To remove:

1. Remove and separate door.
2. Remove vent conduit (2 — 1/4" hex head screws).
3. Remove 2 — 3/8" hex head, 1/4-28 thread, screws holding the handle.



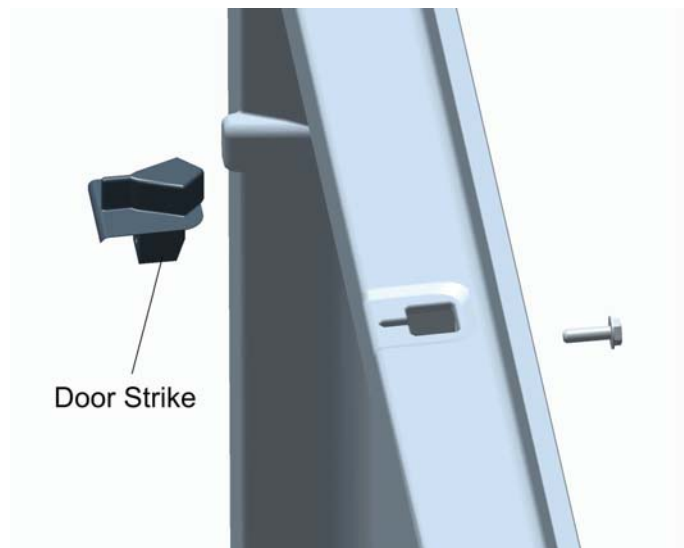
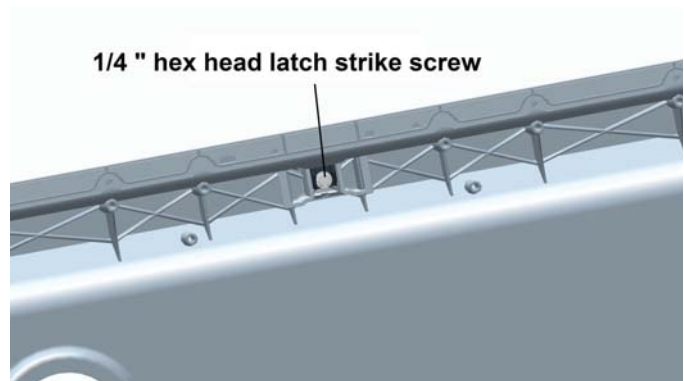
Latch strike

Door Strike is attached to the inner door panel, SS inner doors will have an adapter to secure the strike to the inner door

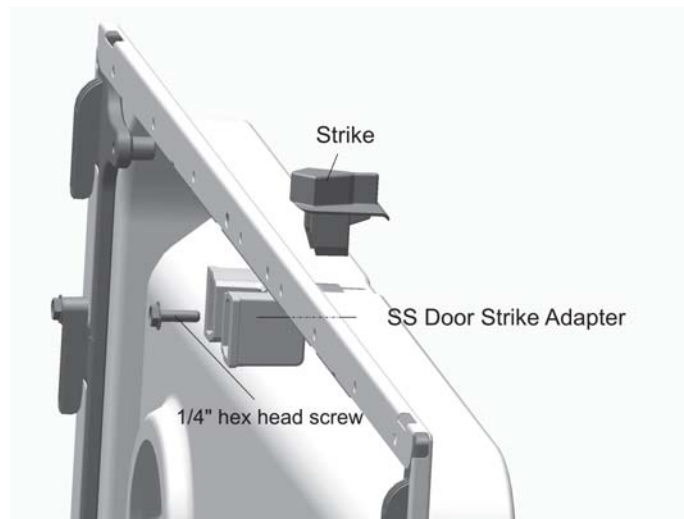
To remove:

1. Remove and separate door.
2. Remove the Control Console or Control Panel.
3. Remove the Pocket Handle (some models).

4. Remove the 1/4" screw holding the strike (a Phillips head screw will come with the service part for easier installation).



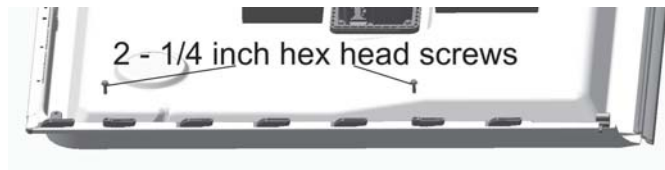
5. SS inner door models have an adapter the screw secures too.



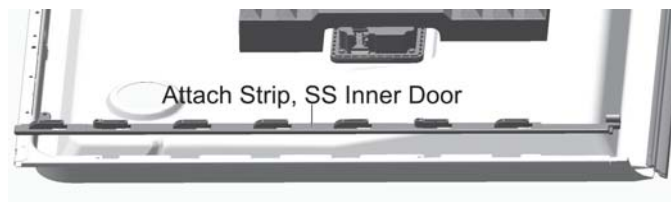
SS Door Attach Strips

Attachment strips are used on SS Inner door models only, plastic inner doors have this feature molded into them. Strips also have the boss for the screw to secure the inner and outer door panels.

1. Remove and separate inner and outer door panels.
2. Remove the front control console or top control panel.
3. Remove 2 — 1/4" screws.



4. Slide the strip inward to remove.



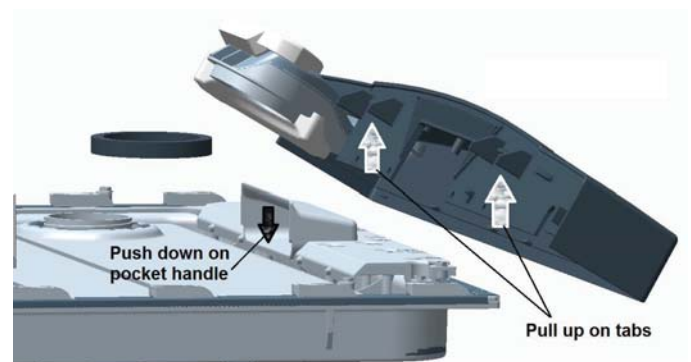
UI Board

There are three types of User Interface Control Boards. Two for front control units and the third for top control units. All will require door removal and separation to access.

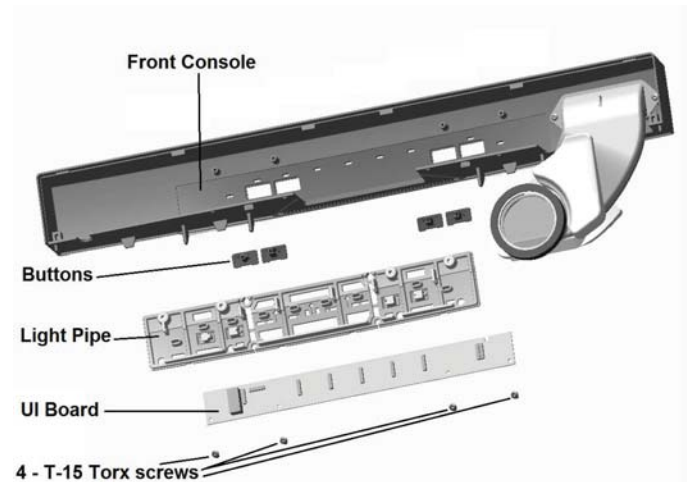
Model personality jumpers configure the replacement UI board to the proper model (the factory installed controls are programmed electronically). See replacement control instructions.

Front Control

To remove the control console push down on the pocket handle and lift the 4 tabs upward.

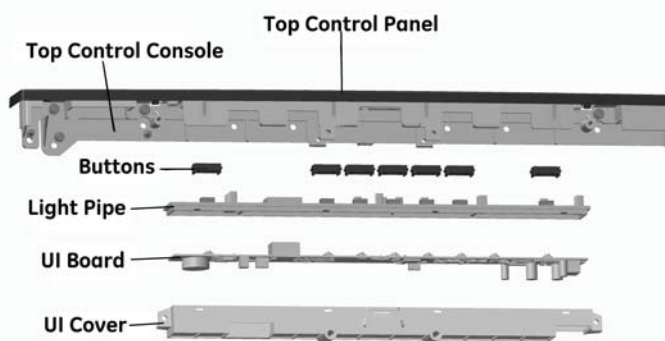
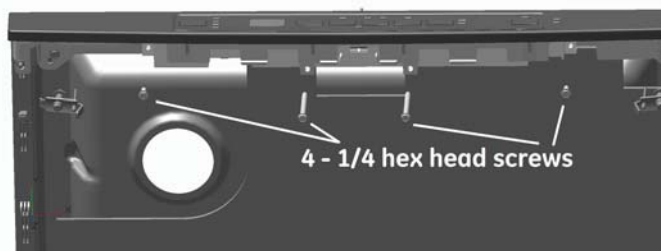


To remove the UI board from the control housing, remove the 4 — #15 Torx head screws securing the control.



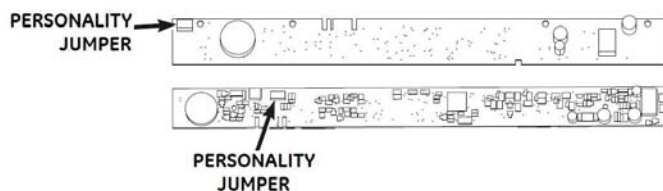
Top Control

Remove the 4 — 1/4" hex head screws to remove the UI cover, board, light pipe and buttons. the 2 inner or center screws are longer than outer screws.

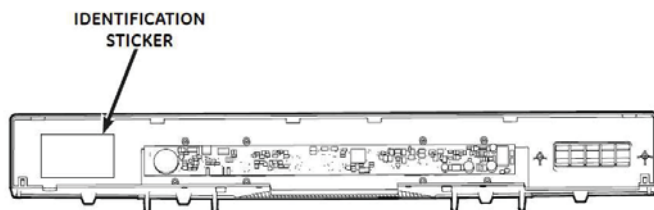


UI Control Replacement

When replacing a UI control board, the new board will have to be configured for proper operation. Make sure to follow the instructions included with the control. Configuration is accomplished with 4 jumpers located on the control (see Service Control Replacement instruction in this guide).



Personality configuration can be located on a sticker which is located in the control panel area.



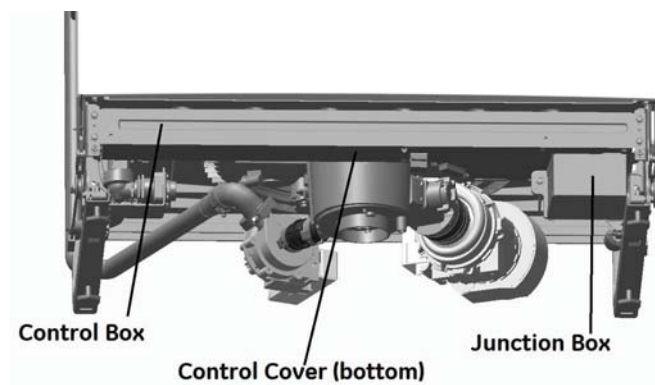
NOTICE

Keys/Buttons and LED's will not function until an appropriate personality is selected. See UI part instructions, included with new UI Board.

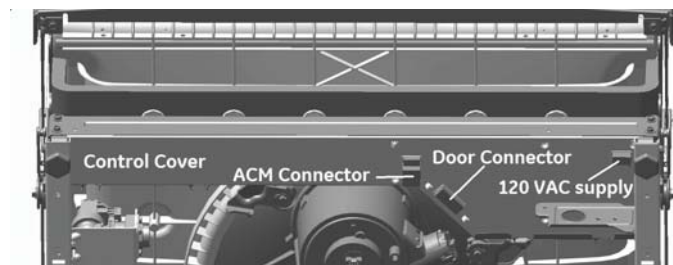


Main Control Board

The main control board has a 120 volt AC input from the consumers home. It's outputs include 120 volt AC to the heating element, wash and drain motors. The control also supplies 13.5 volts DC to the fill system and both 5 & 13.5 volts to the UI board and detergent module in the door. The control is located under the dishwasher.



Some connectors are located through the bottom cover to allow easy access to AC supply connector, door harness and ACM or Appliance Control Module. The ACM or Smart Appliance allows the appliance to communicate with the utility meter when peak rates occur and allows the appliance to respond and operate in a manner that will reduce energy usage of that appliance at high/critical demand rates. For more on the module and display, refer to Smart Appliance Documents.



The main control has a service LED which aids diagnostics.

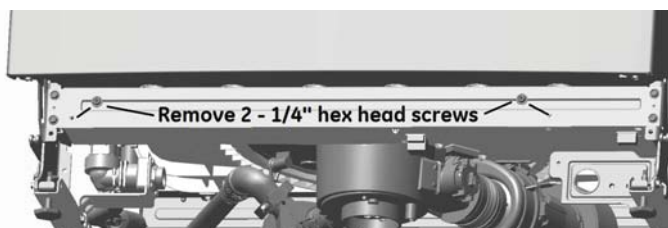
To Access Main Control Board

Many components can be checked from the main control, it can be accessed with door on or removed if needed.

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

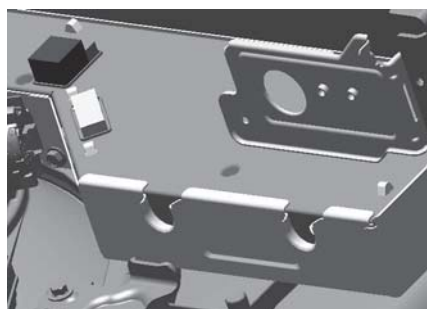
1. Remove power to the dishwasher.
2. Remove the toe kick panel and insulation where applicable (GDT550).
3. Optional: door can be removed if desired.
4. Remove junction box cover.
5. Remove 2 — 1/4" hex head screws.



6. Pull down on bottom cover at front of control box.



7. While pulling down on the front of the bottom cover, slide the cover forward to clear the back lip and junction box bracket. (viewed from bottom and back).



8. Pull cover and control forward taking care not to damage board or wiring.



Use care when reinstalling main control board to prevent wire pinching. Make sure harnesses are routed properly.

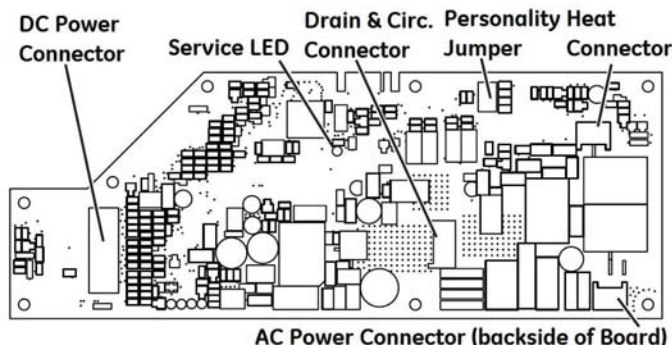


To Diagnose Main Control Board

NOTICE

GE Factory Service Technicians are REQUIRED to wear voltage rated gloves and cut resistant gloves over them to conduct any live power testing on the control boards in the dishwasher.

Main Board diagnostics is aided with the addition of a green Service LED on the machine control board that indicates the status of the control board.



Blink Pattern	Meaning
1x per 3 seconds	Unit is not running a cycle. Select a cycle and press Start.
2x per 3 seconds	Unit is in delay start and is waiting to start a cycle. The cycle will begin once the delay expires.
3x per 3 seconds	Unit is in the process of running a cycle.
4x per 3 seconds	Unit is paused. Close the door and press the start key to resume the cycle.
5x per 3 seconds	Unit has completed a cycle mode. Clean light on.
6x per 3 seconds	Control is in demo mode. Press demo key sequence to exit. (Hold Start and Heated Dry for appx. 5 sec.)
Flashing (1x per second)	Communications lost between control boards. Check connections, replace UI board if necessary.
Flashing rapidly (4x per second) or steady on	Software error. Replace machine control board.
Steady off	Unit is not powered. Check that power is available at unit. Power supply failed. Check control voltages and replace machine control board.

Sump Module

NOTICE

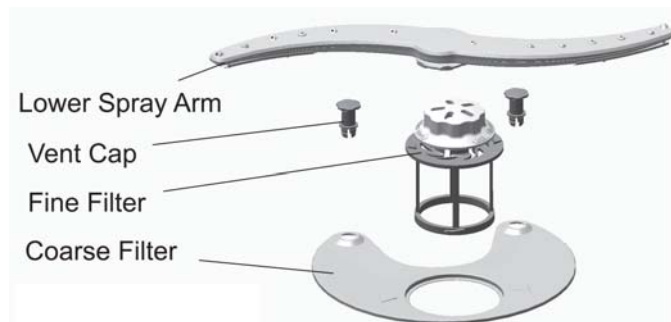
Potential Ergonomic Risk: GE Factory Service Technicians must utilize good body posture and position when reaching inside the dishwasher or under the dishwasher to latch or unlatch sump latch clips.

To remove the sump module

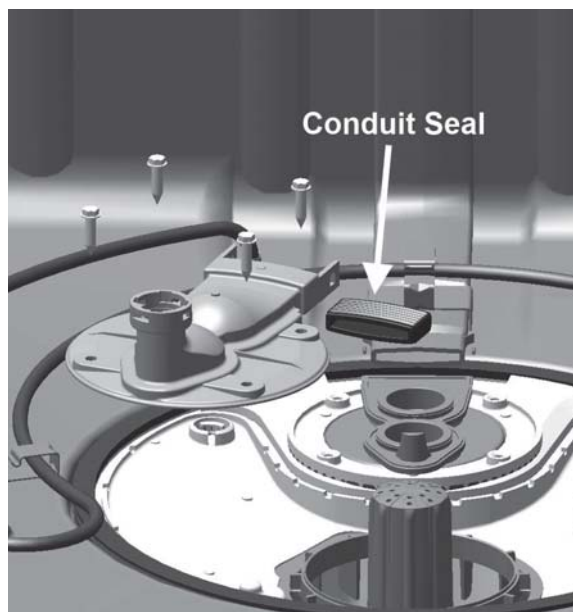
1. Remove power to unit.
2. Remove toe kick (see toe kick removal).
3. Remove door (see door removal).
4. Remove lower rack.
5. Remove lower wash arm, turn mounting nut counter clockwise to remove.



6. Remove fine filter (twist counter clockwise), filter vents (twist counter clockwise) and coarse filter (lift to remove).

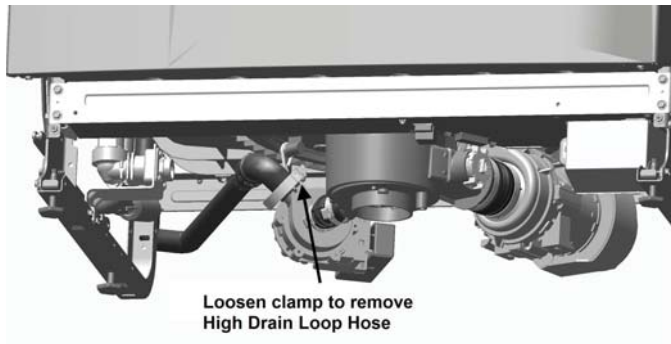


7. Remove conduit adapter plate (4 — ¼ hex headed screws) and lift up on conduit plate (note location of conduit seal).

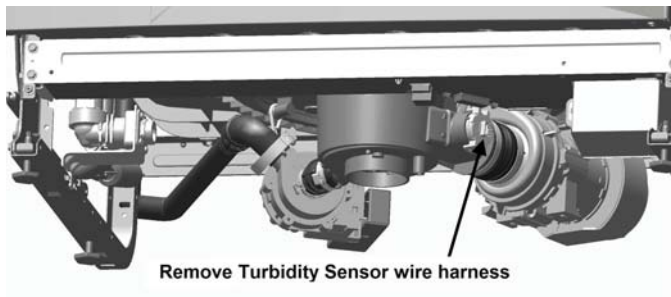


8. Remove water from sump.

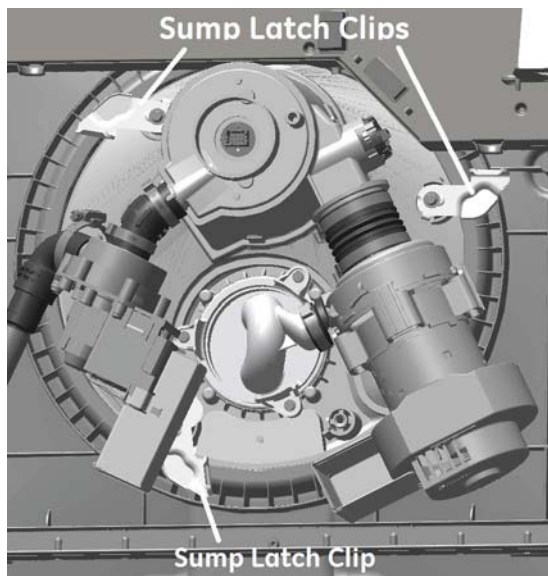
9. Remove high drain loop hose from drain pump, 1/4" hex head worm gear clamp.



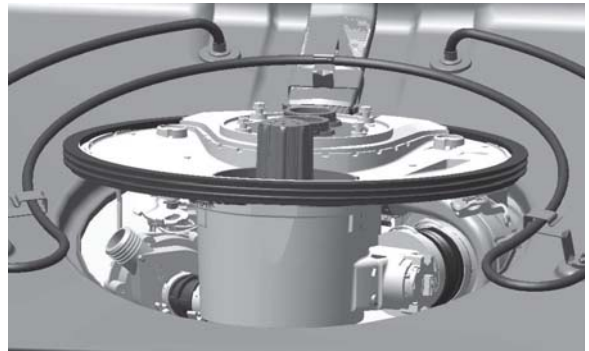
10. Disconnect turbidity sensor wiring.



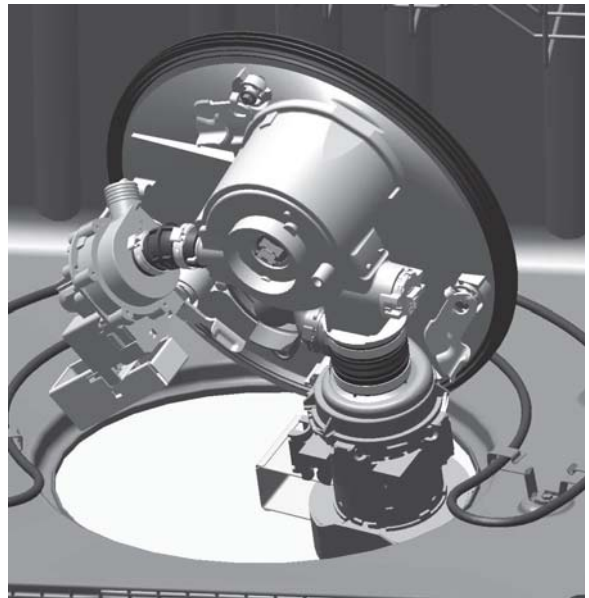
11. Unlatch sump clips (3), turn to stop point.



12. Push sump from bottom into tub.



13. Grasp sump from inside, lift and tilt.



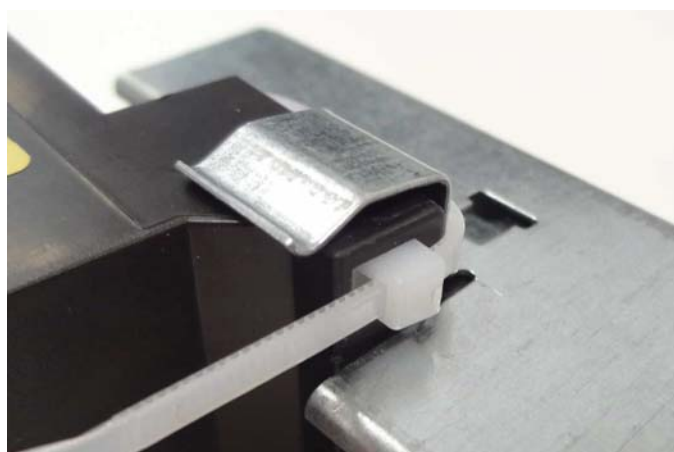
14. Remove flood sensor harness, safety covers and wiring from drain and wash motors.



⚠ WARNING

Grasp harness connector to prevent damaging the harness wiring.

15. The Drain Pump Shield has a wire tie securing the cover to the pump, it will have to be cut off and replaced.



16. Remove WR neutral wire to heater.

17. Sump is now free to remove.

⚠ WARNING

All Safety Shields must be reinstalled..



Wire Routing



NOTICE

WD35X10382 Clamp Kit can be used to replace any or all clamps on sump assembly.

To service the diverter, wash and drain pumps, the sump must be removed.

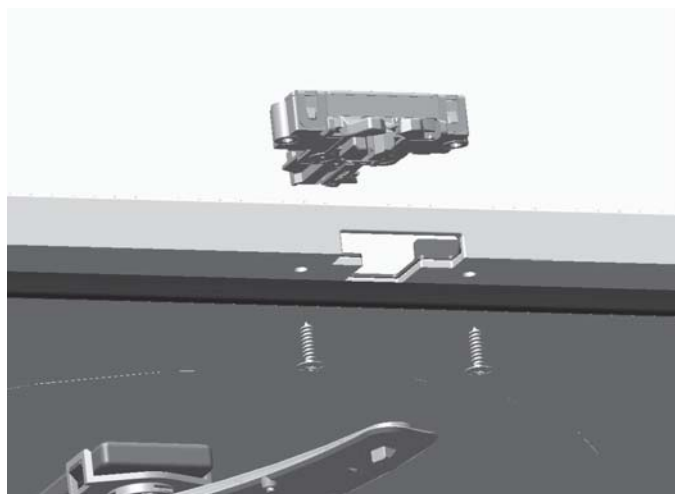
Latch Assembly

The door latch switches are 13.5 volts. The door latch switches open and close the line and neutral break relays on the main control. The Latch assembly is located on top of the tub. The unit will have to be pulled out 6 — 8 inches from its installed position to replace. Diagnoses can be accomplished in Error Code Mode (see error code mode).

To replace the Door Latch / Switch Assembly

1. Remove power to the dishwasher.
2. Remove the unit from its installed position, pulling the unit 6-8 inches forward (see main board connectors and pins section of this guide).
3. Remove 2 screws, (R2 Robertson / Carpenters Bit or #2 Phillips screwdriver).

4. Disconnect wiring to switch.

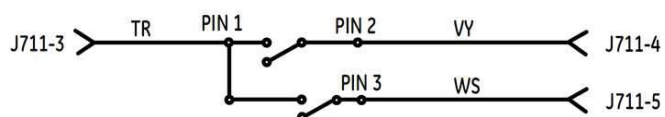


Latch Switch Diagnosis

Diagnoses can be accomplished in Error Code Mode (see error code mode) or with an ohm meter at the main control board.

1. Access main board.
2. Locate and dis-connect connector J711.
3. Check continuity from pins 3 (tan & red) — 4 (violet & yellow) and pins 3 (tan & red) — 5 (white & silver). Both should be open when door is open and closed when door is closed.

Latch Switch Strip Circuit

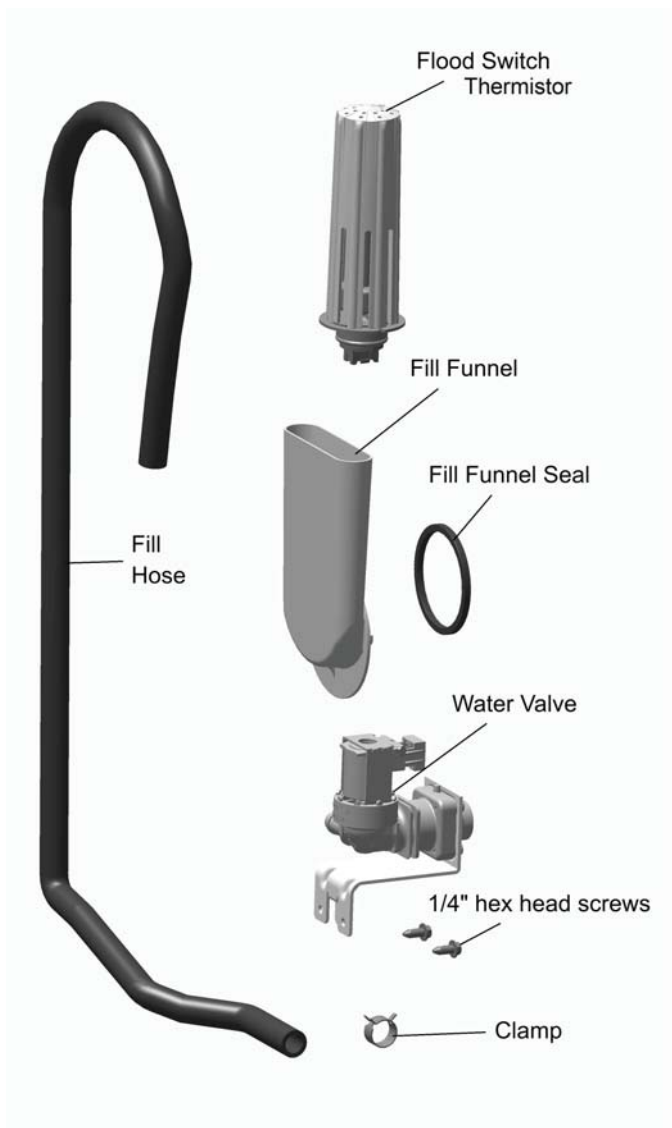


If a unit is found to not start and door switches will not close (use Error Mode to detect) the spacers may be missing (see door alignment). Door will have to be removed to verify.

Door Alignment

The first 2012 GE Dishwashers produced (July and August serial numbers start with MZ & RZ), will have spacers to ensure proper height of the door and interaction of door strike to the latch assembly. During the Month of August (serial RZ) change in production will eliminate these spacers. This change will be on all units produced in September (serial SZ) and after (See page 33 for details).

Fill System



Fill Operation

The Dishwasher has a fill volume of an approximate .83 Gallon of water and is a DC volt circuit.

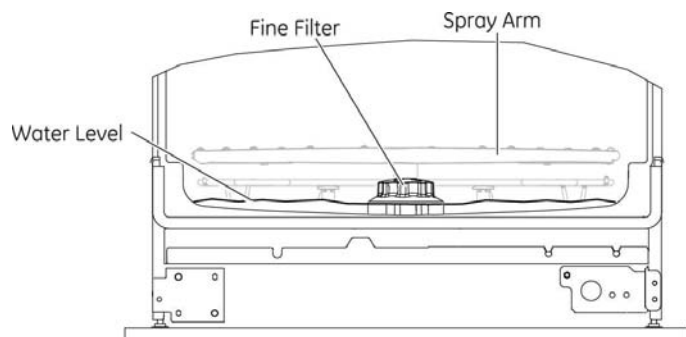
The Water Valve is rated at 13.5 VDC, resistance is 32 ohms and is rated at .83 GPM. The fill time is 1 minute except for a 30 second fill when a partial drain has occurred in the previous Pre-Rinse cycle (see Cycle Chart).

The **Water Valve** is located in the front left corner under the dishwasher as with past GE Dishwashers. It is secured to the left base leg assembly.

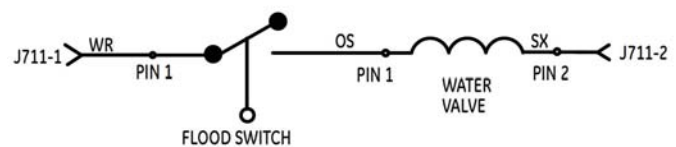
The **Flood Sensor** is located in the sump. The Flood Switch has an internal float which will open the fill circuit, should the fill level reach a near flood condition.

The Thermistor is part of the flood sensor and monitors the temperature of the water in the sump.

Proper Water Level



Fill Strip Circuits

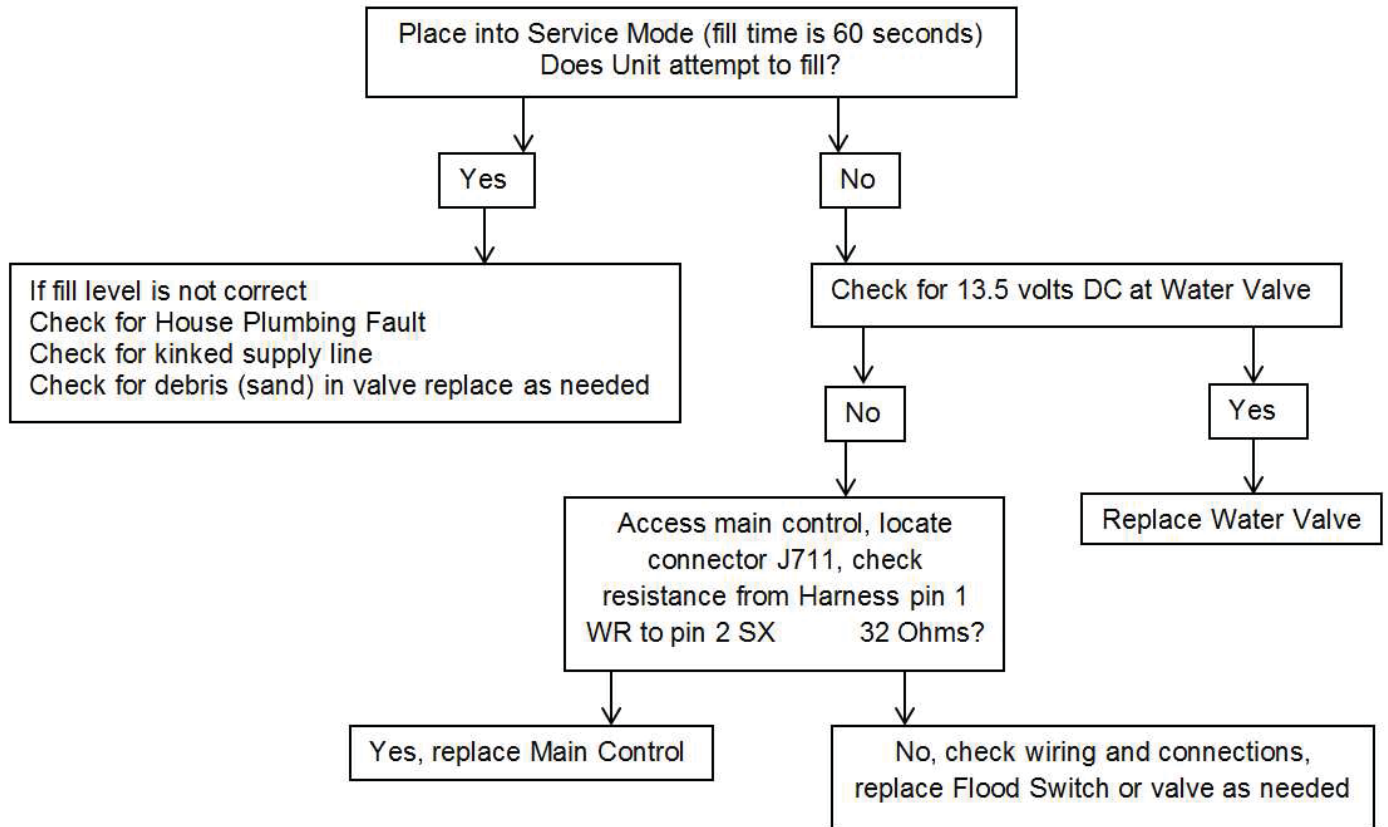


⚠ WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair

To Check for proper Water Level, place the dishwasher in Service Mode and run the Fill Test (see service mode).

Fill Diagnostics



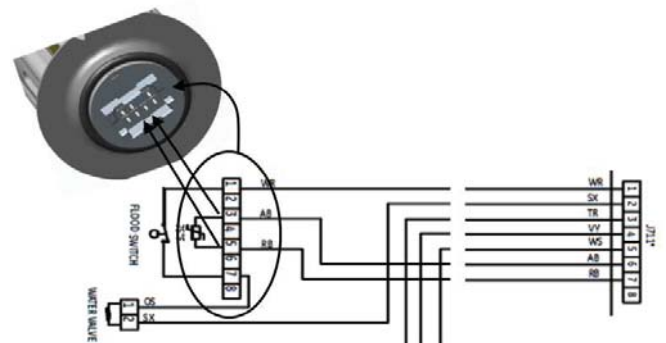
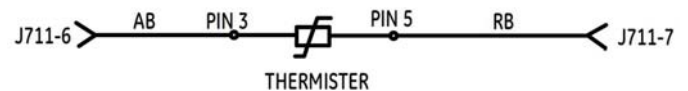
Thermistor

The Thermistor is located inside the flood switch assembly. The thermistor monitors water temperature in the tub, if the thermistor opens or shorts it will cause an error (see error mode). If it fails in open or shorted, the control will default to the longest time algorithm.

To Check the Thermistor, the flood switch can be removed or can be checked by accessing the Main Control (see main Board) check resistance on connector J711 Pins 6-7.

DC Voltage	Resistance	Temperature
0.95	20K	50
1.56	11K	75
2.25	5.8K	100
2.91	3.4K	125
3.48	2.1K	150
3.91	1.3K	175

Strip Circuit



Fill Flood/Float Switch Removal

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

1. Remove power to the dishwasher.
2. Remove toe kick.
3. Remove wire tie holding the harness to the sump.



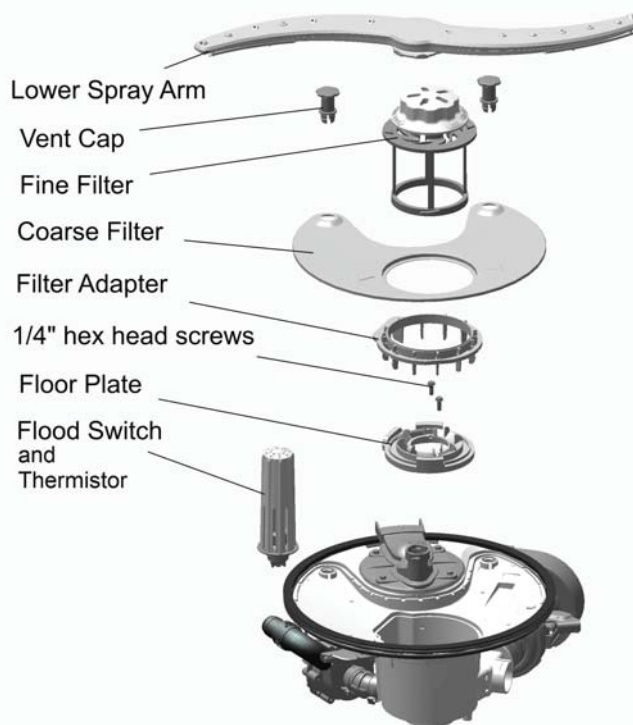
4. Remove lower rack.
5. Remove lower wash arm (twist lock nut counterclockwise).
6. Remove the filter vents (twist lock design, turn counter clockwise to remove).
7. Remove fine filter (twist lock design, turn counter clockwise to remove).
8. Remove coarse filter.
9. Remove filter adapter (tab lock design) by pulling up on adaptor.
10. Remove any water in the sump area.
11. Remove 2 — 1/4" hex head screws securing the floor plate and flood switch.
12. Remove floor plate and flood sensor.

13. Remove harness to flood switch assembly.



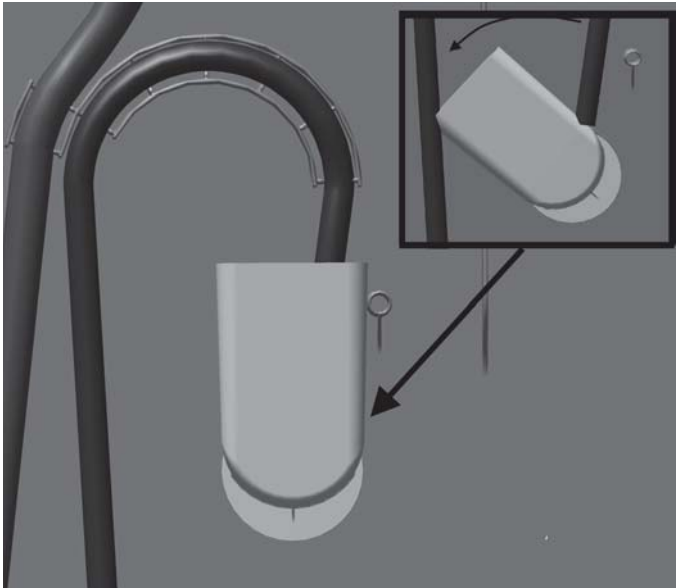
NOTICE

GE Factory Service Technicians are REQUIRED to wear voltage rated gloves and cut resistant gloves over them to conduct any live power testing on the control boards in the dishwasher.



Fill Funnel and Hose

The Fill Funnel is located on the left side of the dishwasher tub and can be removed by turning the fill funnel counterclockwise (twist lock design). There is a seal between the fill funnel and tub. The fill hose connects the Water Valve to the Fill Funnel.

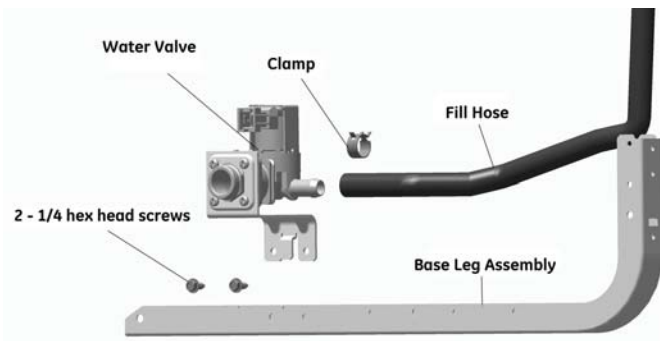


3. Remove 2 — 1/4 hex head screws from bracket to leg assembly.
4. Slide bracket off leg (lift up).
5. Remove Wire Harness.
6. Remove Fill Hose by using pliers to remove tension on spring clamp.
7. Remove hose from valve.

NOTICE

GE Factory Service Technicians are REQUIRED to wear voltage rated gloves and cut resistant gloves over them to conduct any live power testing on the control boards in the dishwasher.

Fill Water Valve



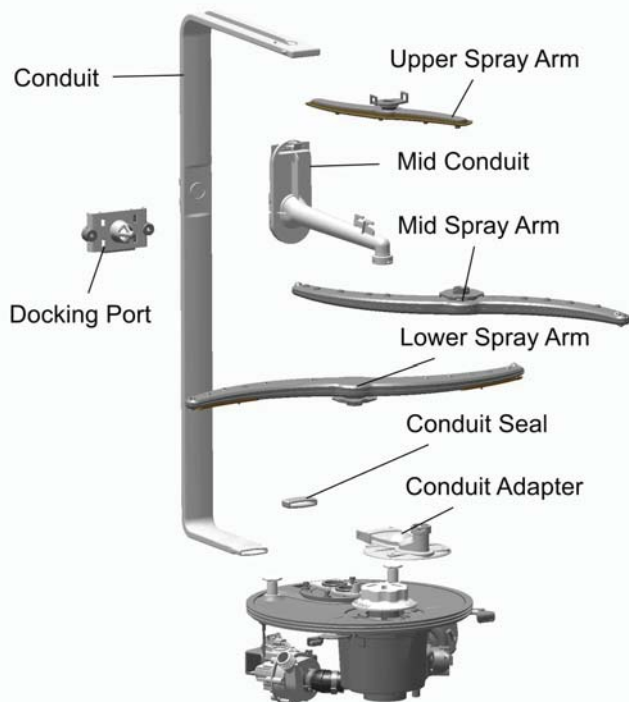
To remove the water valve:

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

1. Remove Power to Dishwasher.
2. Remove Toe Kick.

Circulation System



This section will discuss wash system filtration, operation, components, removal procedures and diagnostics. The new 2012 GE Dishwasher features alternating spray arms to allow for less water to be used, which helps energy efficiency. A diverter system is used to isolate the wash arms and is controlled by cycling the wash pump as described later in this section, this allows more pressure to be delivered to each zone instead of all spray arms at once.. Some models have a wash zone feature which allows the consumer the flexibility of washing in the lower or upper racks only. Using this feature will shorten the cycle time by 30%. Filtration has been greatly improved to allow clean filtered water to circulate during wash. The fine filter is consumer removable and cleanable. The 4 pass Calrod heater (Watts, 800 wet / 650 dry +/- 5%) allows for better heating of water (see Dry System for more details).

Circulation Operation

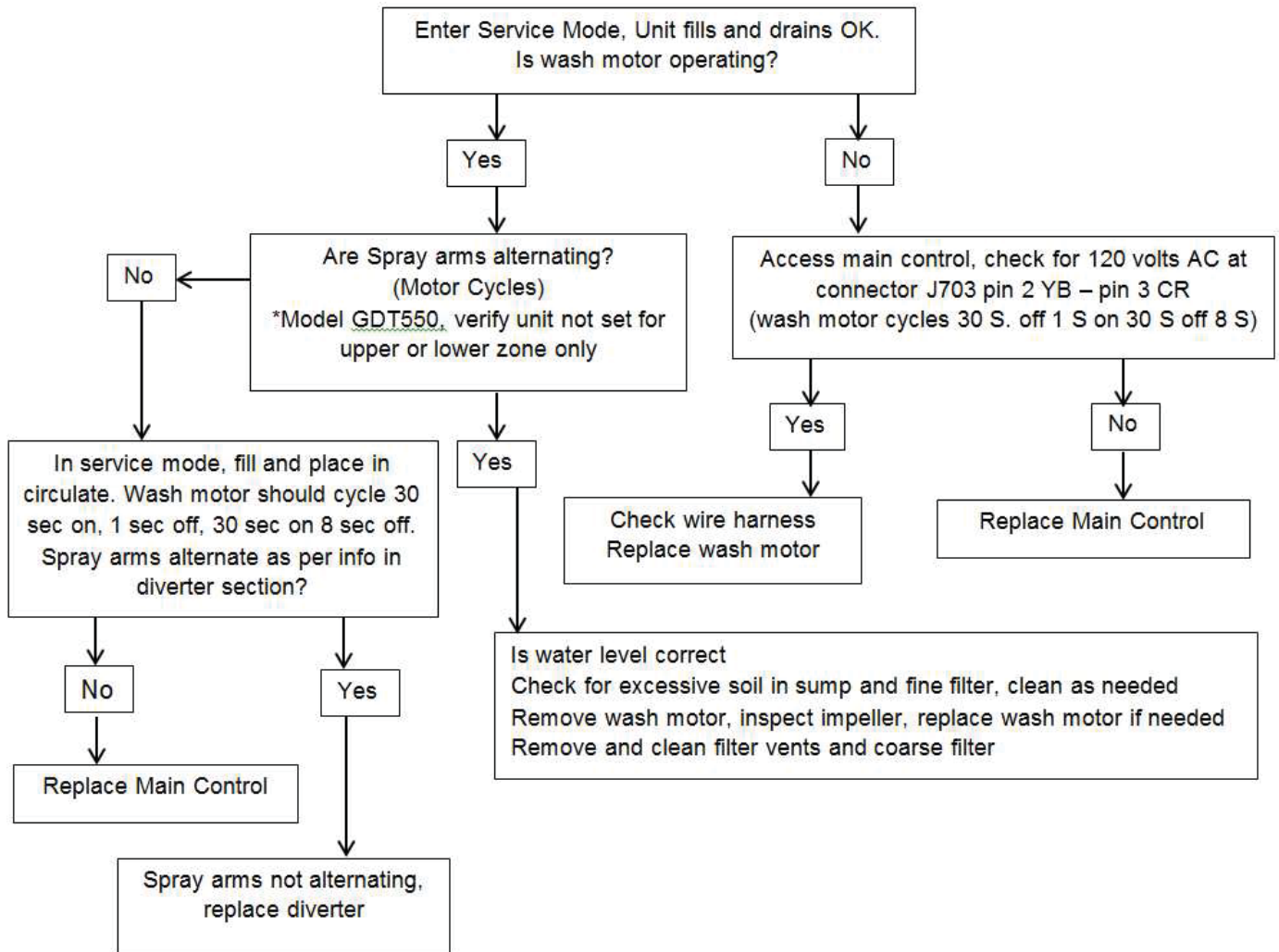
With only .83 gallon of water, filtration is the start of improved performance. Water is cleaned through the coarse and fine filters before it enters the main pump. Water must also flow through the Piranha Hard-Food Disposal and finally into the wash pump and motor assembly. Clean filtered water then flows into the diverter system which directs it to either the lower spray arm or mid and upper spray arms (see diverter operation). The 4 pass heater ensures hot water is circulated to optimize cleaning. Water is jetted with more power to different wash zones created by the diverter. The wash pump motor assembly circulates 8 GPM at 5 PSI to each zone separately. Details of operation are found in each section of this guide.

Circulation Specifications

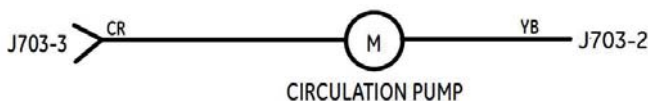
- Circulation Pump: 120 VAC, .8 amp – 3.8 LRA, 8GPM @ 5PSI
- Heater: 120 VAC, 18 ohm wet – 23.4 ohm dry, 6.7 amp wet-5.125 dry, Watts 800 wet /650 dry +/- 5%
- Detergent Cup: 13.5 VDC , 32 ohms, .5 second to release detergent cup, 15 seconds to release Rinse Aid (see door section)
- Turbidity Sensor: 5 VDC to LED, 10K ohms
- Thermistor (in flood switch)

Resistance	Temperature
20K	50
11K	75
5.8K	100
3.4K	125
2.1K	150
1.3K	175

Circulation Diagnostics



Circulation Strip Circuits



Circulation Motor Pump Assembly

The Main Wash Motor is a DC Brushed Motor, it has onboard AC to DC rectification. Resistance cannot be properly checked on this motor because of the rectifier and diodes inside the motor shield.

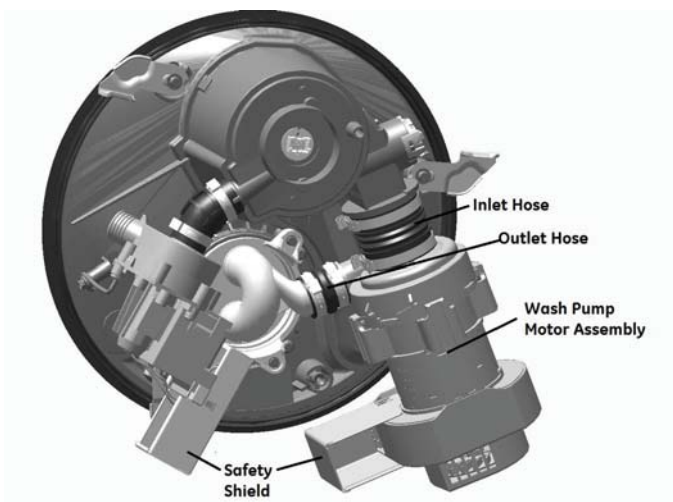
To Remove circulation pump motor assembly:

WARNING

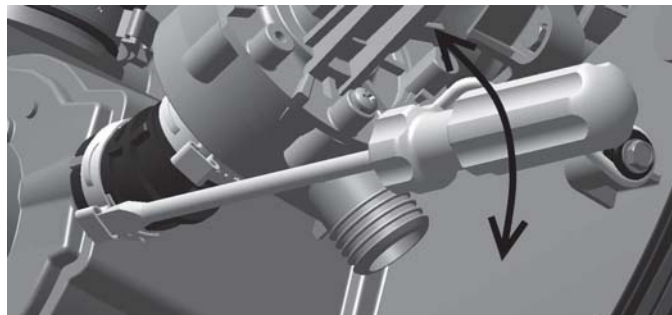
GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

1. Dis-connect power to the dishwasher.
2. Remove toe kick panel.
3. Remove the door.

4. Remove the sump module.



WD35X10382 Clamp Kit has all 6 clamps located on the sump module.



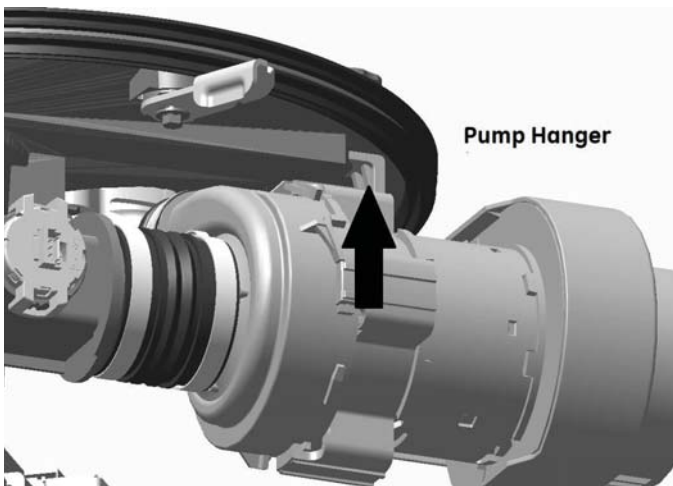
WARNING

All Safety Shields must be reinstalled..

5. Loosen the inlet and outlet wash motor clamps.



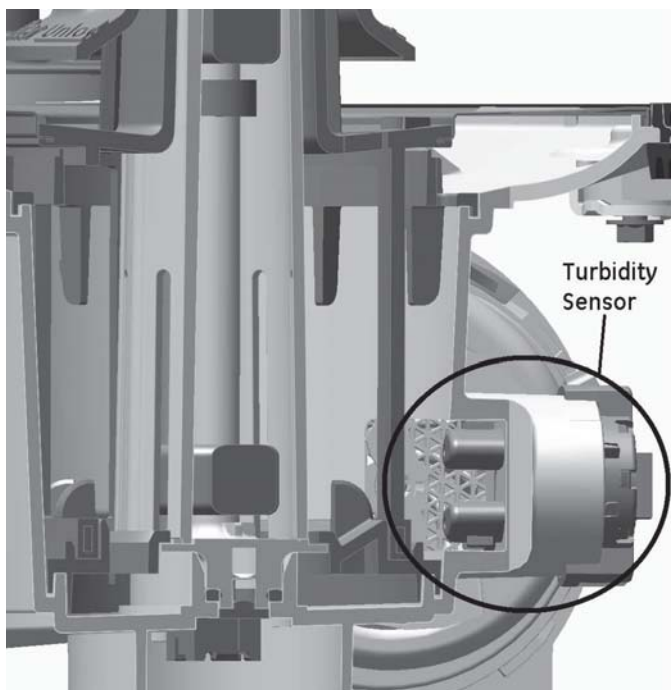
6. Slide the wash motor off the hanger, remove and discard one time use clamps.



Clamp removal tip: Use small screwdriver inserted into ear of clamp and move the handle back and forth to loosen the clamp. Clamp can be removed and discarded when component is removed.

Circulation Turbidity Sensor

Turbidity sensor measures the amount of suspended particles of the filtered wash water. The sensor assembly contains a LED transmitter which emits light and a receptor (similar to a photo-cell) which receives light. The wash water passes between the transmitter and receptor, the control interprets these readings to determine the soil level and if any pre-wash or rinse cycles may be skipped. Cycle design sets perimeters to a maximum cycle length, turbidity response will shorten the overall cycle length if soil level is below the cycle preset specifications. By measuring several times during a cycle to monitor soil levels, energy can be saved by removing unneeded rinses, thus shortening the overall cycle time.



NOTICE

If the turbidity sensor fails open or shorted, the control will default to the maximum fills and circulation time the control is programmed for.

To remove the sensor, empty the sump of water. Disconnect the wire harness, turn the sensor counter-clockwise and pull from the sump.

⚠ WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

Turbidity Sensor Calibration

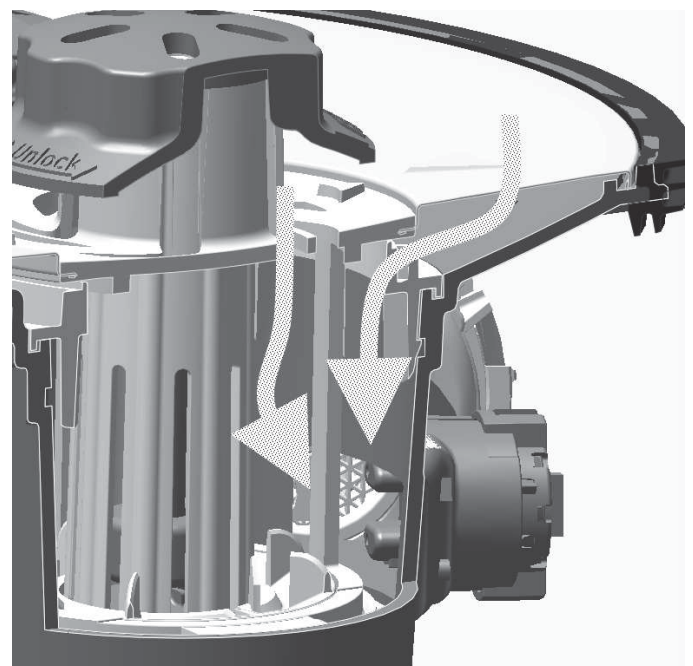
Calibration occurs every 100 cycles. After the final rinse but before dry, the control will add 3 extra rinse cycles. The first will fill, circulate 2 minutes and drain. The second will be a fill and drain. The third will be a fill, circulate and calibrate and drain. The cycle will now advance to dry and complete the cycle.

Replacement controls will enter a calibration as mentioned above at the end of the first cycle the control finishes. If the first cycle is interrupted and calibration does not occur, calibration will retry on the next cycle, until it is completed. Calibration will not occur on demand.

Turbidity Sensor Diagnostics

Use Diagnostic Error Code Mode to look for Turbidity Sensor Errors.

Filters



Good Filtration is key to good wash performance.

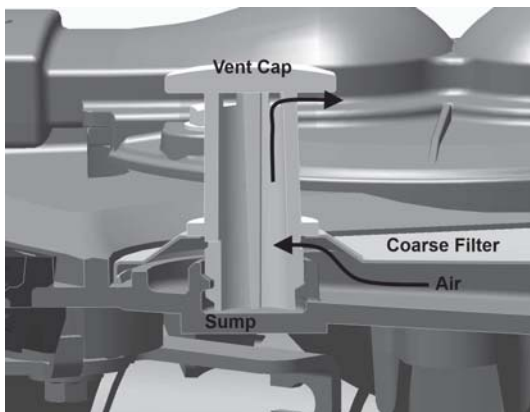
Fine Filter is consumer removable with twist lock design, the Use and Care Book advises the consumer to remove and clean every 60 days or more frequently depending on use. Using brushes or scouring pads will damage the filter.



Air locking under the coarse filter can affect performance. Air trapped under the Coarse Filter will escape through the 2 filter vents, allowing peak performance.

Filter Vents are Twist Lock, counter clockwise to remove, clockwise to secure. They should be inspected and cleaned as needed for good wash performance.

The Coarse Filter is located on the sump assembly and should be cleaned each year or as needed for optimum performance. To remove the Coarse Filter, remove the fine filter and the 2 filter vents at the rear of the filter and lift up on the filter.



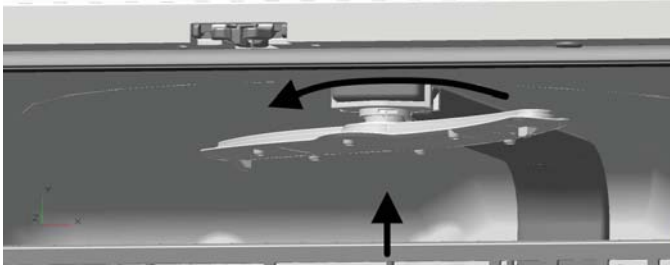
Upper Spray Arm

The upper spray arm provides a gentle shower down to the top rack. There is a tab on the main conduit which secures the spray arm to the main conduit. A limited amount of dishwashers will be produced with the hub "welded" to the bearing assembly which will change the way this early version is removed. Units produced in July serial MZ and early August, serial RZ will have the welded version. All units produced in September SZ will have twist lock design.

To remove the upper spray arm, (MZ & RZ) use a small screwdriver to release the spray arm from the main conduit.

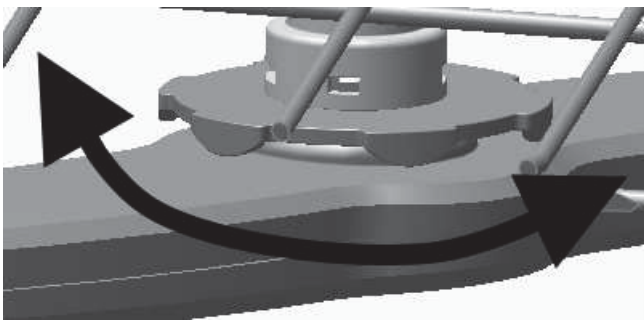


To remove upper spray arm on units made in mid August (RZ) September (SZ) and after, simply push up and turn counter-clockwise to remove.



Middle Spray Arm

The Mid Spray Arm provides an upward directed spray pattern to the upper rack. The spray arm, bearing and nut come as an assembly with twist lock design. to remove turn nut counter clockwise.



Middle Conduit

The mid level conduit supplies water from the main conduit to the mid spray arm. Adjustable racks have an adjustable conduit to allow proper engagement of main conduit to mid conduit. The adjustable conduit has an internal check valve to block wash water from exiting the wash system, keeping water directed into mid spray arm.

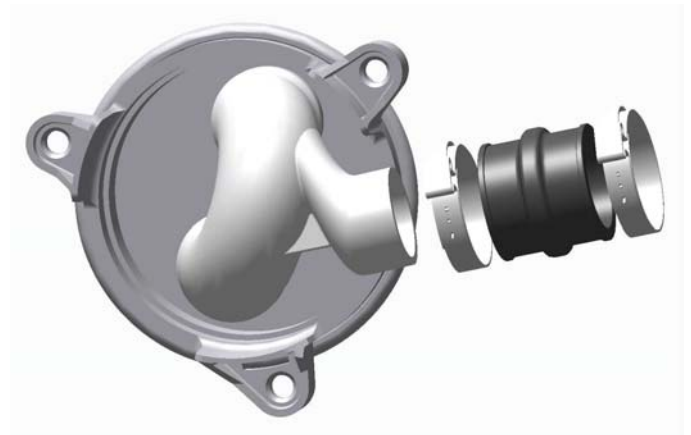
Lower Spray Arm

The Lower Spray Arm provides an upward directed water flow. The arm, bearing and nut come as a complete assembly and has a twist lock design, to remove, turn the nut counter clockwise. Only the lower spray arm has heat shields.



Circulation Diverter

There are 2 diverters being used, the second will be replacing the first after 2 months of production. First part will be used on Serial numbers MZ & RZ July and August 2012. it will have a hose with clamps on each end of the hose.

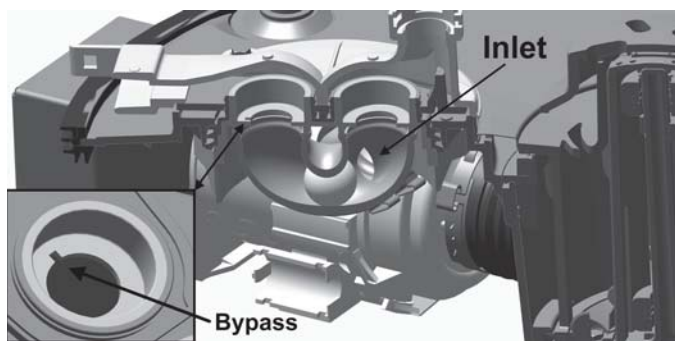


During the month of August the diverter will change to one with an over-molded hose, eliminating the use of one clamp.

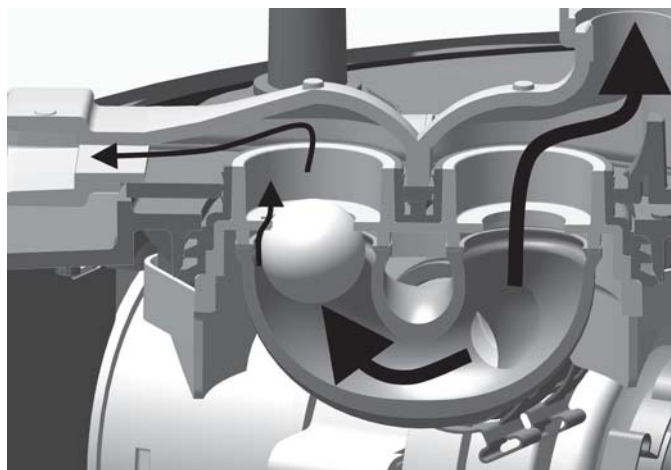


For Units made in August (serials RX) both versions will be seen. September (serial SZ) the over-molded version will be the only diverter used. The new will replace the old.

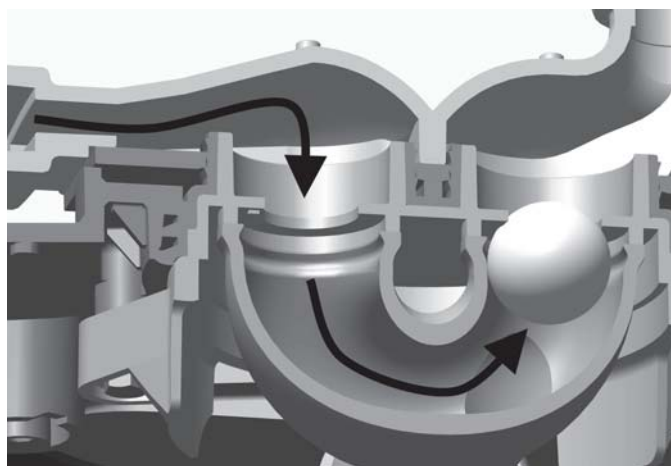
It is important to note the “Bypass” in the rear port of the Diverter, it allows for water to bypass the check ball in the diverter as described in the next step. the dishwasher is in off or standby mode, no pump operation. Check Ball is at the bottom of Diverter.



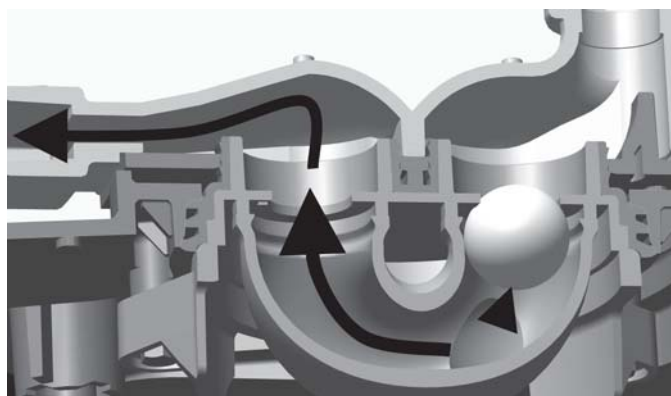
Wash pump turns on, water flows to lower spray arm, check ball blocks rear port or upper spray conduit. Low pressure and low volume water bypasses check ball by the By-Pass and fills the main conduit with water.



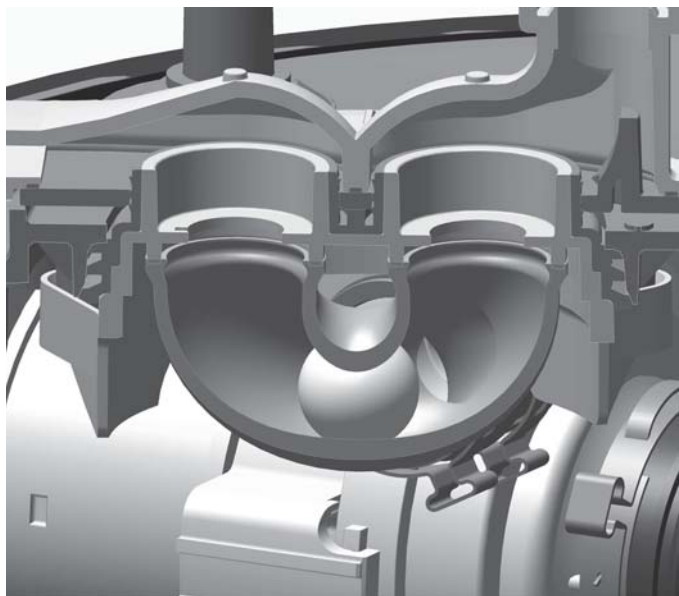
Wash pump cycles off for 1 second, water that is in the rear conduit, forces the check ball to the lower spray port.



Wash Pump cycles on, check ball seals lower wash arm. Water flows to upper spray arms.



Wash pump cycles off for 8 seconds, water pressure in spray arms equalizes, check ball is in bottom or home position. When wash pump starts, the check ball again seals the rear port or upper spray arms. Cycle repeats.



To Remove the Diverter

WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

1. Disconnect power to the dishwasher.
2. Remove the door.
3. Remove the sump assembly.
4. Remove the 3 –1/4" hex head screws securing the diverter to the sump.
5. Loosen the clamp on the diverter inlet hose, slide the diverter from the hose.

6. Remove and discard one time clamp.



Clamp removal tip: Use a small screwdriver inserted into ear of clamp and move the handle back and forth to loosen the clamp. Clamp can be removed and discarded when component is removed. WD35X10382 Clamp Kit has all 6 clamps located on the sump module.



WARNING

All Safety Shields must be reinstalled..

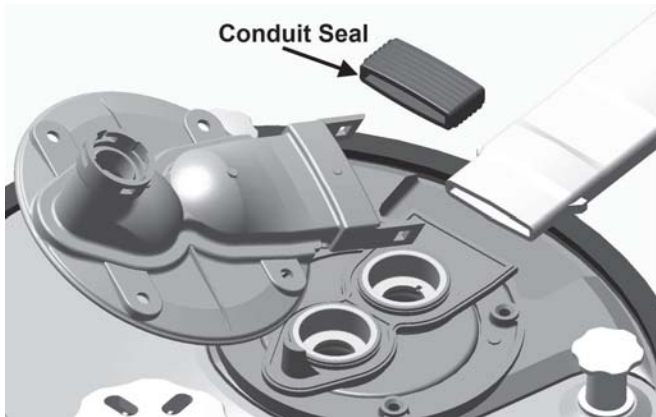
Circulation Conduit Assembly

Main Conduit supplies water to the mid and upper spray arms.

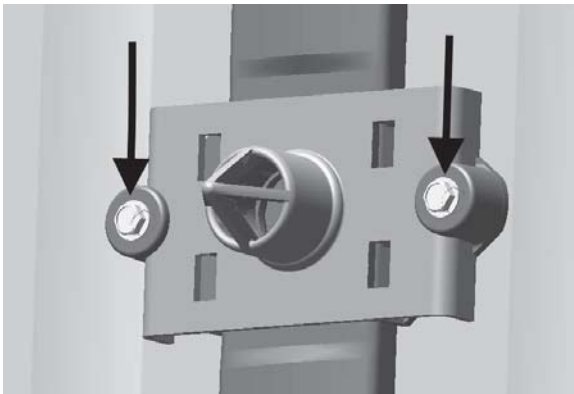
To remove the conduit:

1. Remove both lower and upper racks.
2. Remove lower spray arm.

3. Remove the main conduit adapter plate from the sump by removing the 4 – 1/4" hex head screws. Lift up on the plate to remove. When re-installing, make sure seal is re-installed or poor wash results will occur.

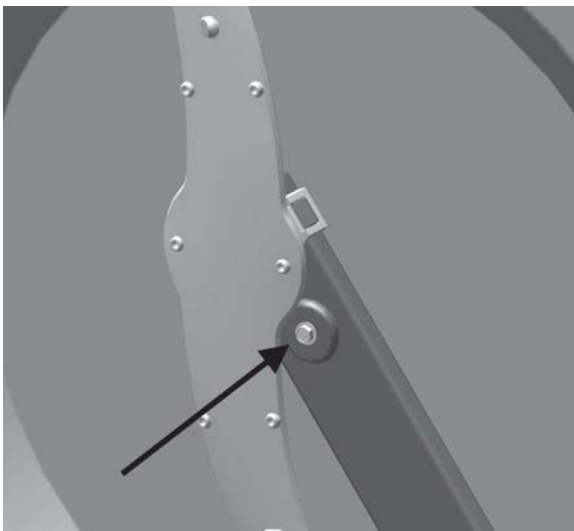


4. Remove the mid spray arm docking port by removing 2 – 1/4" hex head screws.



5. Remove the upper spray arm.

6. Remove the 1/4" hex head screw at the top of the conduit behind the upper spray arm.



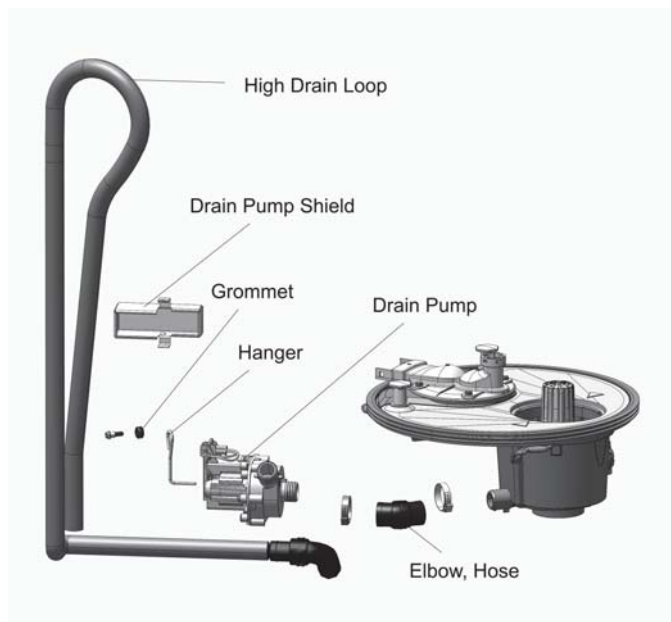
7. The main conduit can now be removed from the dishwasher.

Drain System

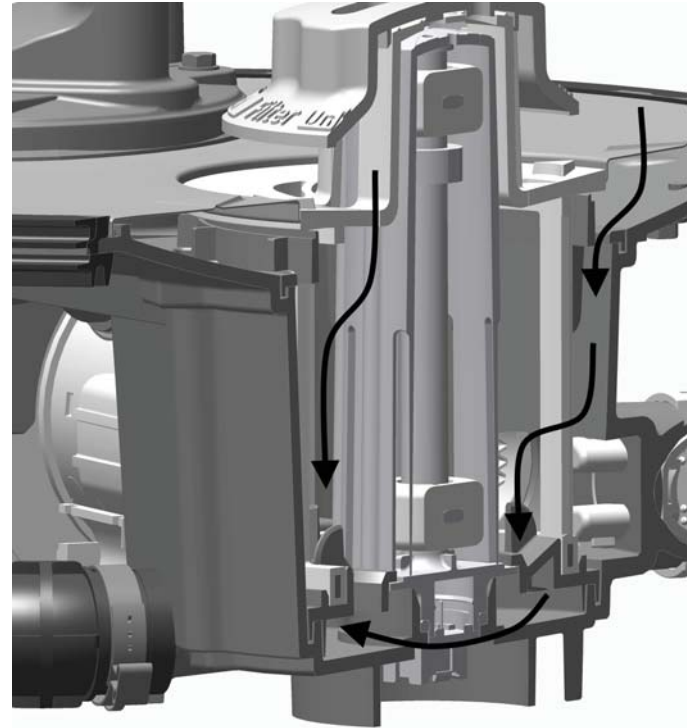
Drain Operation

The Drain Pump is located on the sump assembly and secured in place with a wire hanger and an elbow hose connecting the sump to the drain pump inlet. Drain Pump Specifications 120 volts AC , 27 ohms, .65 amp. The High Drain loop is connected to the drain pump outlet and secured to the side of the tub with molded channels in the tub. The drain hose is connected to the drain loop and to the house drain system. Installation requires the drain hose to provide for a second high drain loop.

A 12 foot drain hose accessory is available separately, part # GPF12. The drain pump has a maximum height capability of 72 inches (poor drain will result if drain hose is higher than 72 inches).



Drain water will back flush the fine filter through the coarse filter, allowing food particles to settle through the floor plate and into the drain pump.



Drain Cycle Algorithm

It is normal for the drain pump to start and stop several times during each drain cycle, this is normal. To ensure proper drain, the drain pump will pause several times in each drain cycle. This is done to protect against air locks and allow for peak performance.

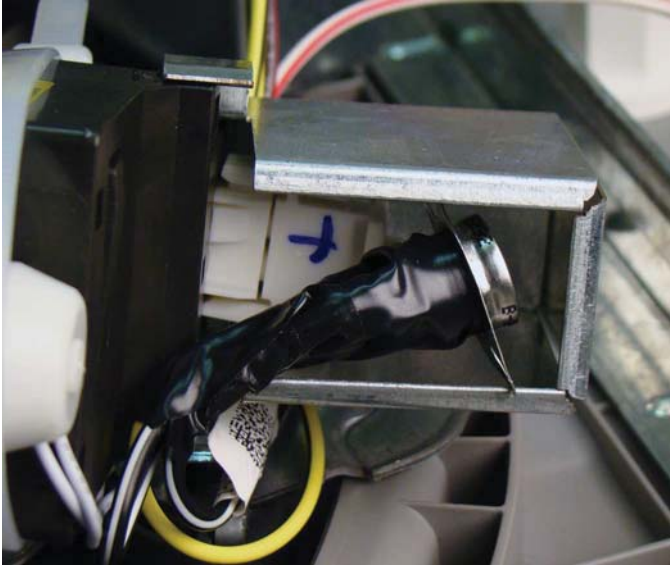
- 3 seconds on
- 1.5 seconds off
- 3 seconds on
- 1.5 seconds off
- 15 seconds on
- Repeat above steps
- 60 seconds on

Some Cycles have a Partial Drain Algorithm

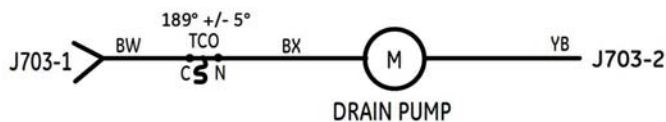
- 3 seconds on
- 1.5 seconds off
- 3 seconds on

- 1.5 seconds off
- 15 seconds on

The Drain Pump has a TCO which breaks the line side of the circuit should excessive heat be detected on the connector. If this TCO trips, replace the drain pump and wire harness. The TCO is part of the AC Harness.



Drain Strip Circuits



Drain Pump

The Drain Pump is a 120 volt AC synchronous motor, resistance of the motor windings is 27 ohms + or — 10%.

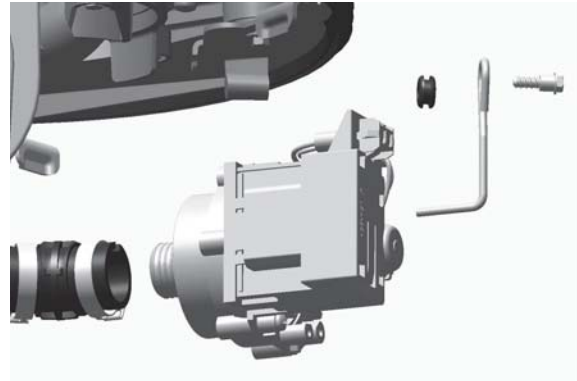
WARNING

Notice: All Safety Shields must be reinstalled..

To remove or replace the Drain Pump

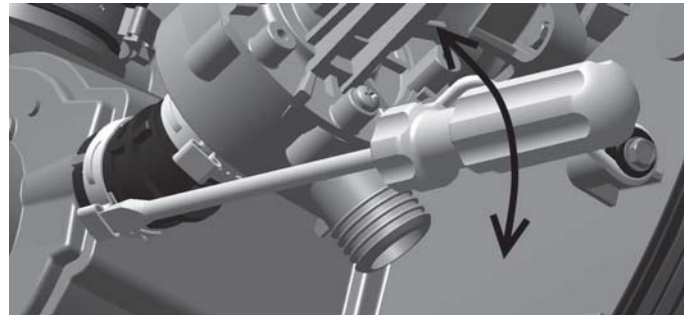
1. Remove power to the unit.
2. Remove the door.

3. Remove the sump assembly.
4. Loosen or remove the Drain Pump Hanger.
5. Loosen clamp (one time clamp should be discarded), remove or replace drain pump.



Clamp Removal Tip: Insert a small screwdriver into the “ear” of the clamp. Move the handle end of the screwdriver side to side to loosen the clamp. Slide the hose and component apart, the clamp can now be removed from the hose.

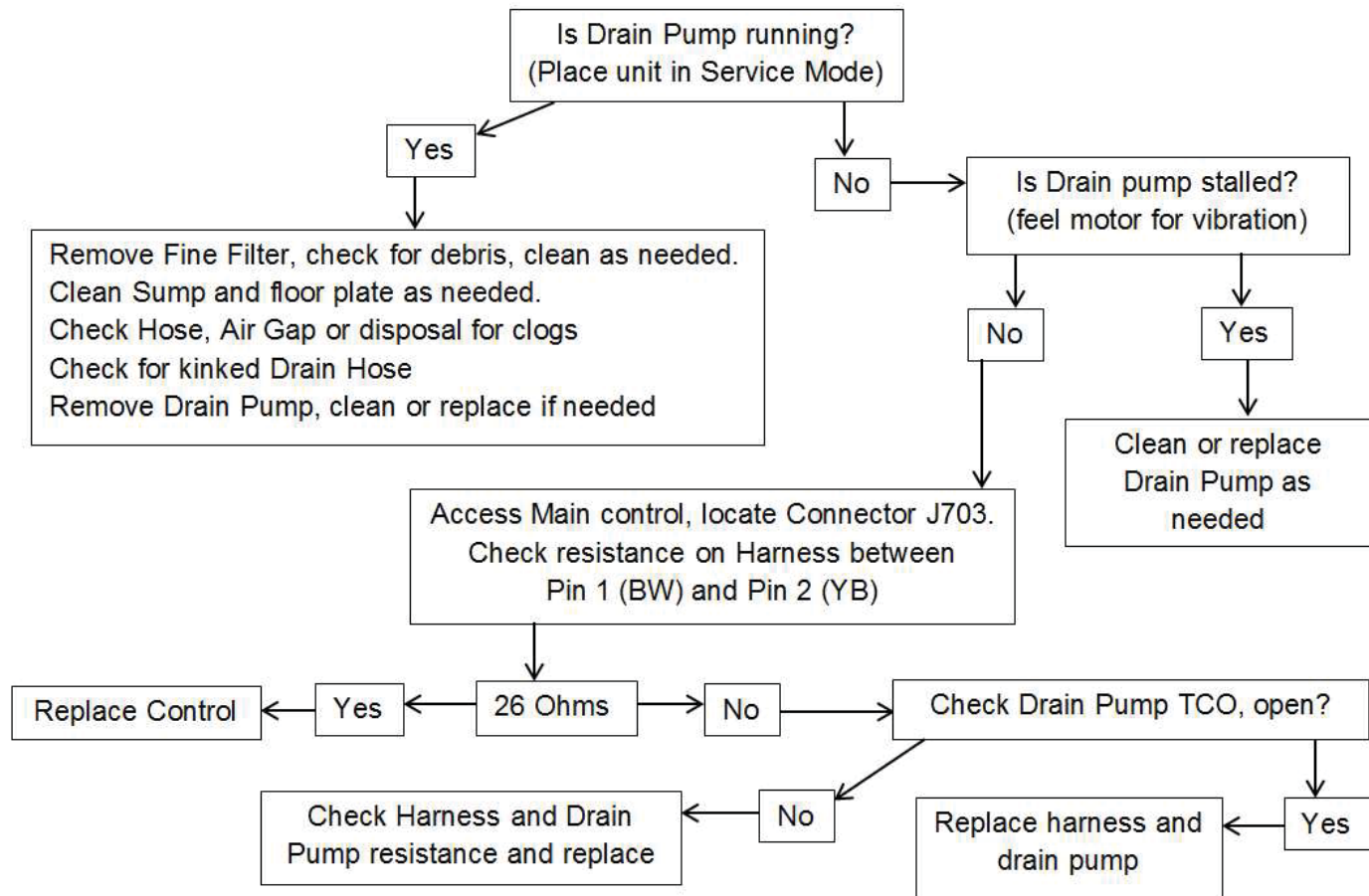
Crimp type clamps will be replaced by WD35X10382 Clamp Kit



When replacing the drain pump clamps (WD35X10382), make sure to position the hose and the clamp are located to ensure proper connection. there is a locator tab on the sump and drain pump and a locating notch in the elbow hose. If not positioned properly, a leak is likely.



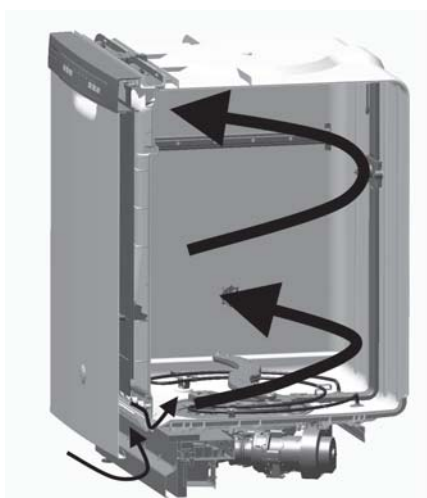
Drain Diagnostics



Dry System

The Dual wattage 4 pass Calrod Heater serves both to heat the water during a wash cycle and to heat the air during the dry cycle. Heat and Air Circulation are required for good Dry performance. Air circulation is natural convection with air entering through the bottom of the door and the fill funnel, then exiting through the vent.

The Calrod Heater is rated as 120 VAC, 18 ohms wet – 23.4 ohms dry, 6.7 amps wet - 5.125 amps dry, Wattages are , 800 wet - 650 dry +/- 5%.



Dry Cycle Operation

Venting is accomplished by a passive venting system, there are no motor's, blowers or damper doors on the New 2012 GE Dishwasher. Air passes into the dishwasher from both the fill funnel and bottom of the door. Circulation continues inside the dishwasher then through the inner door vent cover, into the vent conduit and out the front vent on the door.

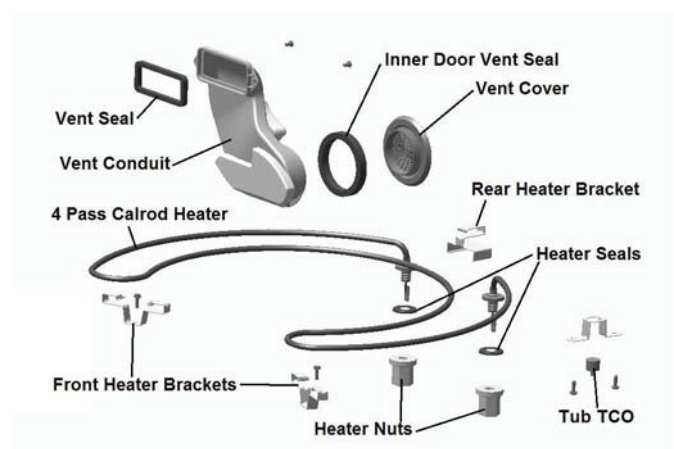
To Remove the Vent

To remove the vent, the door must be removed and separated (see door section).

Dry Cycle Specifications

Calrod algorithms during dry

Dry Components



Heater Algorithm, Dry Cycle

No Wash Boost selected

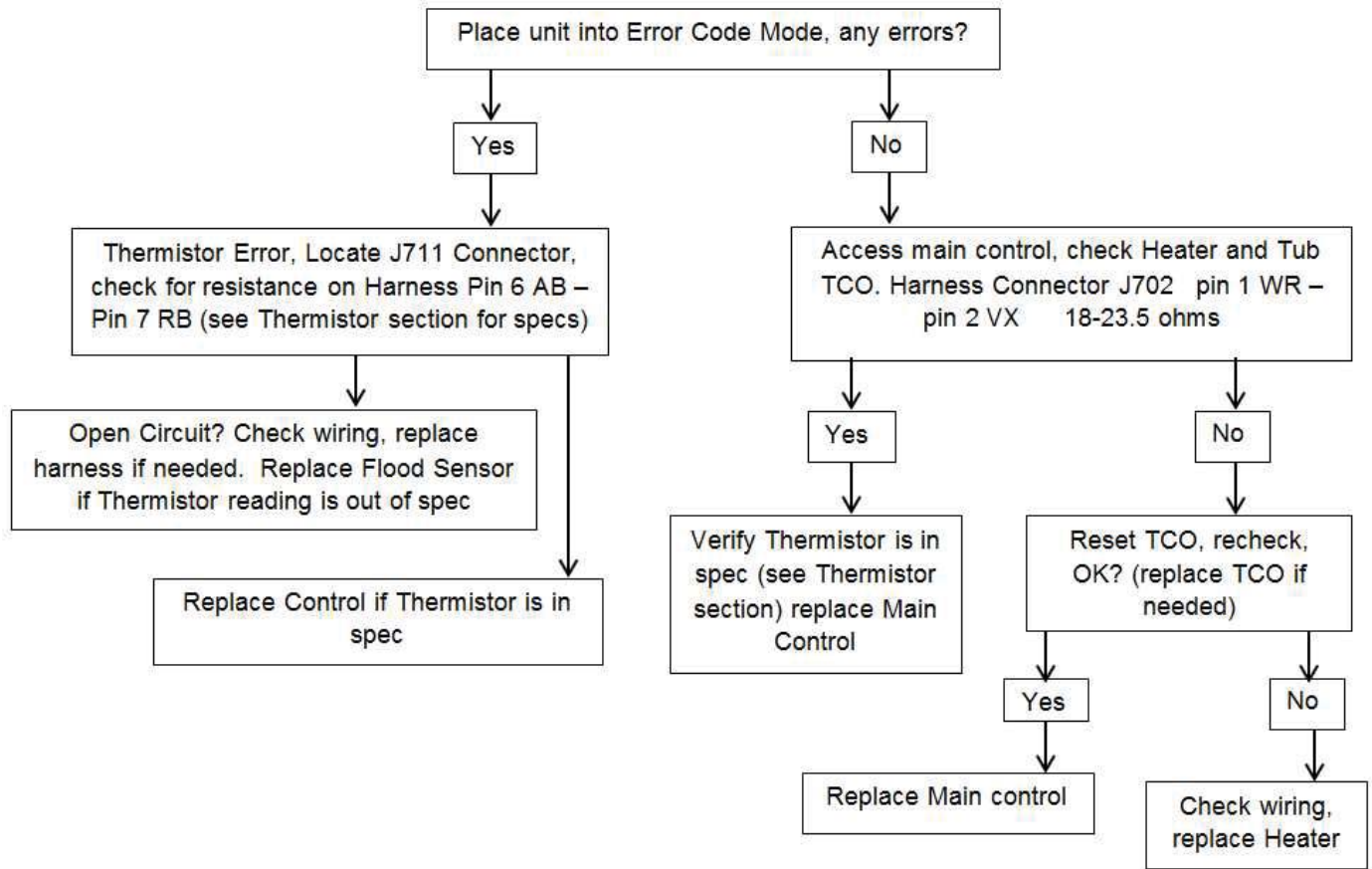
Time (minutes)	Calrod description
6	On
28	Pulses 60 seconds off/60 seconds on
14	Off (cooldown)
48	Total Heated Dry Time

Wash Boost selected (either Sani or Temp Boost)

Time (minutes)	Calrod description
2	On
12	Pulses 60 seconds off/ 60 seconds on
6	Off (cooldown)
20	Total Heated Dry Time

Dry Cycle Diagnostics

Heater not working



WARNING

GE Factory Service Technicians are REQUIRED to follow Lockout / Tagout (LOTO) 6 Step Process prior to beginning repair.

Heating Element

Dual wattage occurs due to the heat level in the element raising the resistance of the internal element. As water quenches the heat on the case, resistance lowers and wattage rises.

The heater can be removed 2 ways;

1. Disconnect power to the dishwasher.
2. Removing the lower rack.
3. Remove the door (see door removal).

4. remove the dishwasher from its installed position and place on it's back.
5. Disconnect the 2 wire leads to the heater.
6. Remove the 2 – 15/16" heater nuts.
7. Remove the heater from inside the dishwasher.

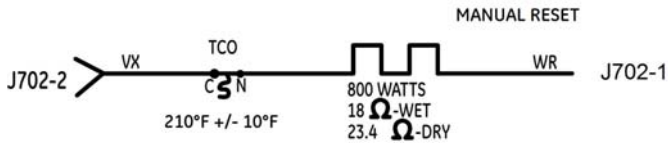
Or

1. Disconnect power to the dishwasher.
2. Removing the lower rack.
3. Remove the door (see door removal).
4. Remove the sump assembly.
5. Disconnect the 2 wire leads to the heater.
6. Remove the 2 – 15/16" heater nuts.
7. Remove the heater from inside the dishwasher.

WARNING

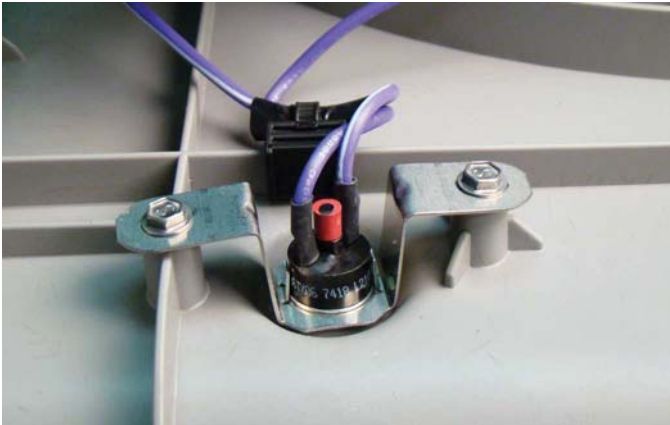
Notice: All Safety Shields must be reinstalled..

Dry Cycle Strip Circuits



Tub TCO

The Tub TCO is used to prevent a run-away heat condition, it is push to reset device. The TCO is located on the right side of the tub, approximately 16 inches from the front of the tub.



The TCO is held in place with 2 — 1/4" hex head screws. The TCO is in a series circuit with the Calrod heater. If it is found open, it can be reset and it is suggested to replace the main control (see Heater section for diagnostics). If the Tub TCO is found open, replace the main control board.

Service Control Replacement

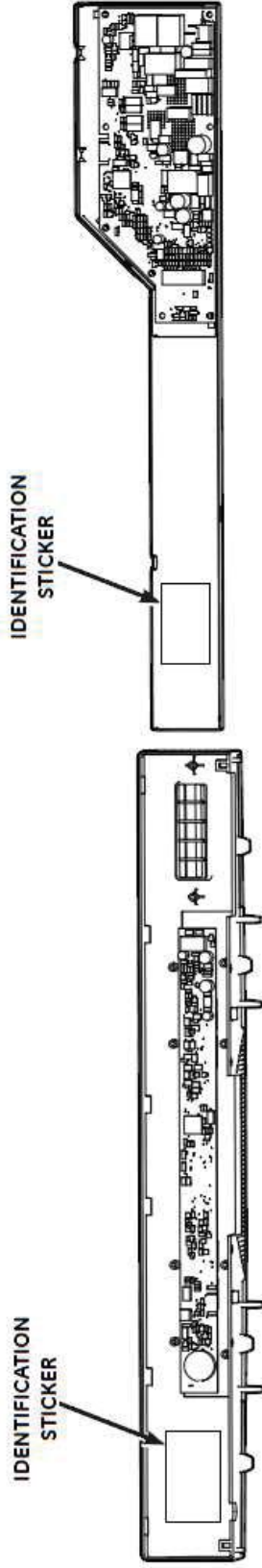
⚠ ATTENTION

Configure personality header BEFORE installing replacement control into unit

Directions for control board replacement:

1.) Identify the jumper configuration for the replacement control board. Configuration is located either:

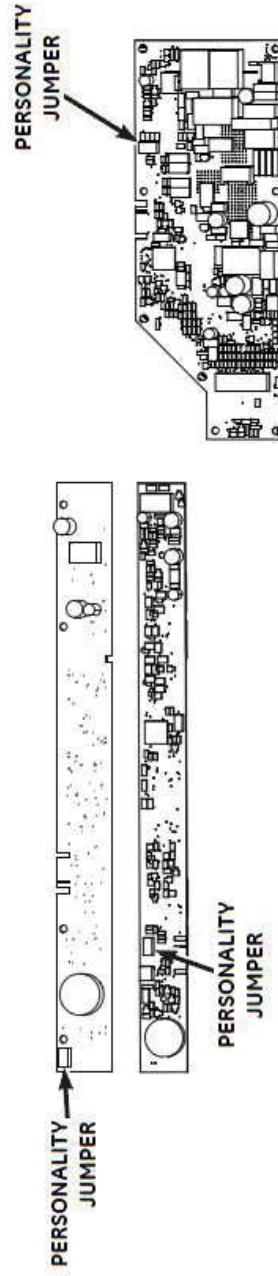
A.) On the Identification Sticker near the control board to be replaced.



-OR-

B.) On the table located on the back of this page.

2.) BEFORE installing, verify that the personality jumper setting on the board you are replacing matches the configuration selected in Step 1. If it does not, move accordingly.


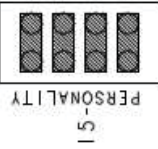
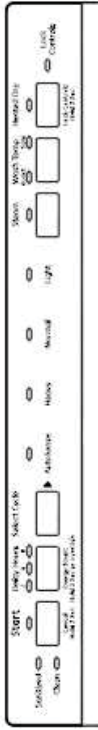
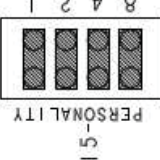
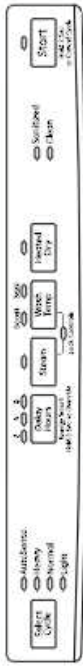
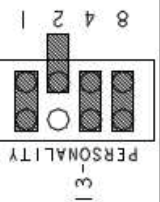
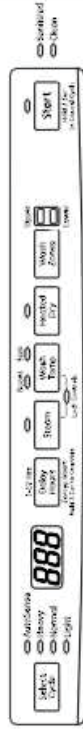
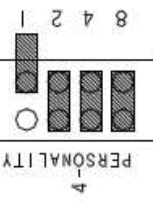


3.) Install replacement control into unit.

4.) Validate board functionality.

NOTE: Keys/buttons and LEDs will not function until an appropriate personality is selected.

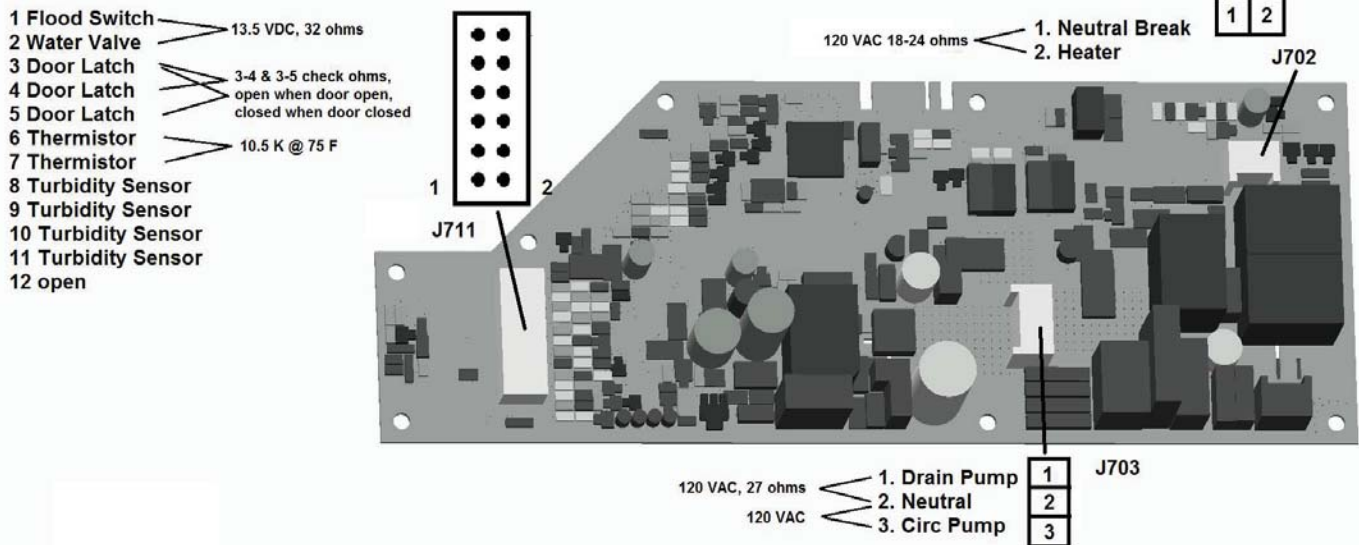
Select the User Interface Appearance which best fits the unit you are servicing.

CONTROL TYPE	USER INTERFACE APPEARANCE	MODEL NUMBER*	USER INTERFACE BOARD JUMPER CONFIGURATION	MACHINE CONTROL JUMPER CONFIGURATION
FRONT		GDF510	NOT APPLICABLE	
FRONT		GDF520 GDF540		NOT REQUIRED
TOP		GDT530		NOT REQUIRED
TOP		GDT550		NOT REQUIRED

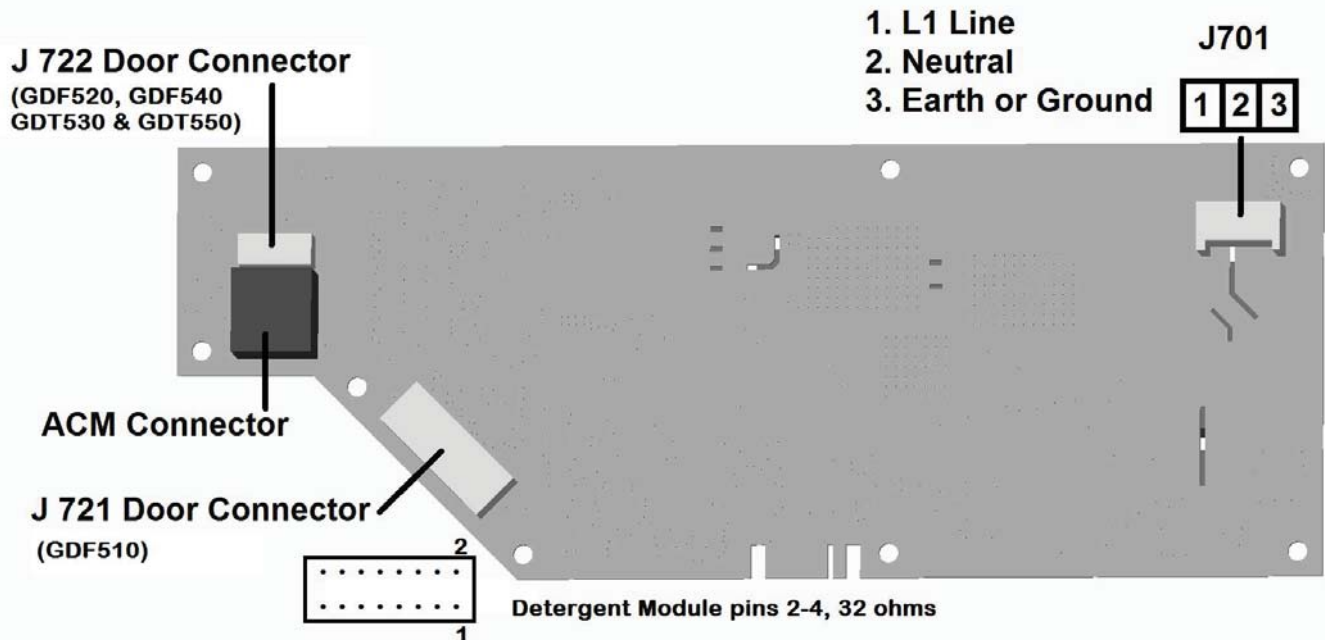
* Derivative or special models may not be included in the model table.
Select Jumper configuration based off Identification Sticker in unit or closest User Interface Appearance shown above.

Connectors and Pin Locations

Main Board (top)

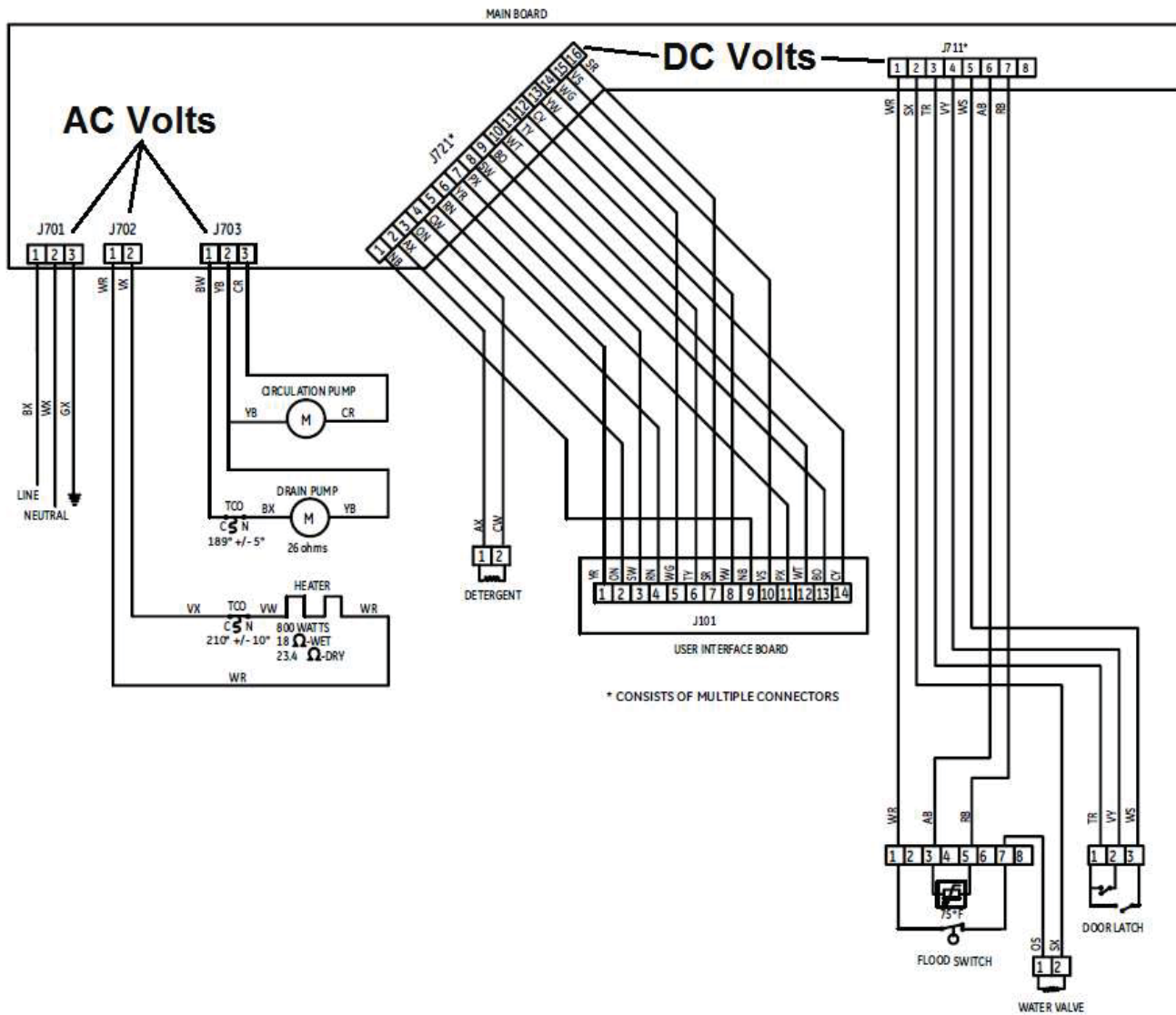


Main Board (bottom)

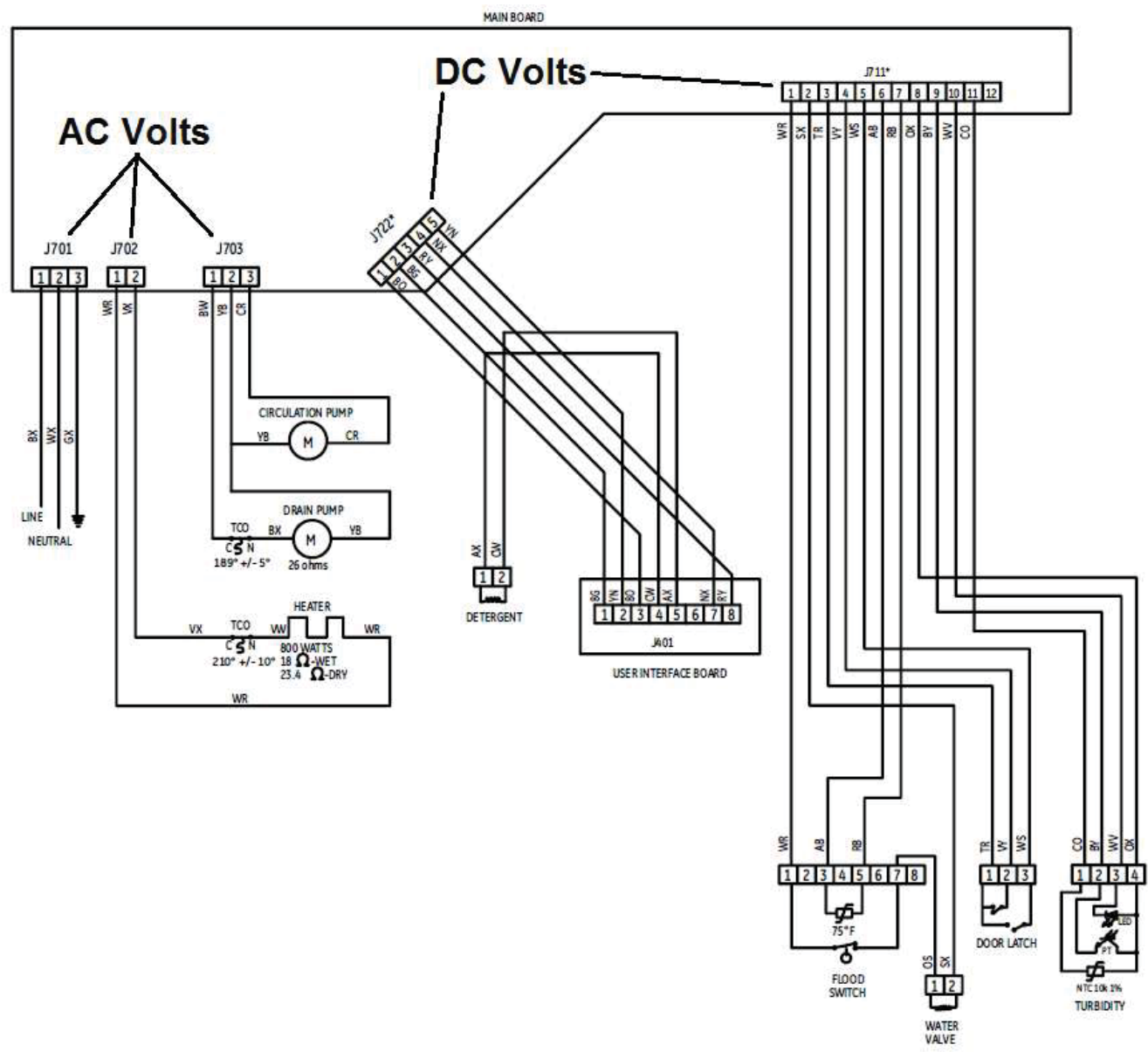


Schematics

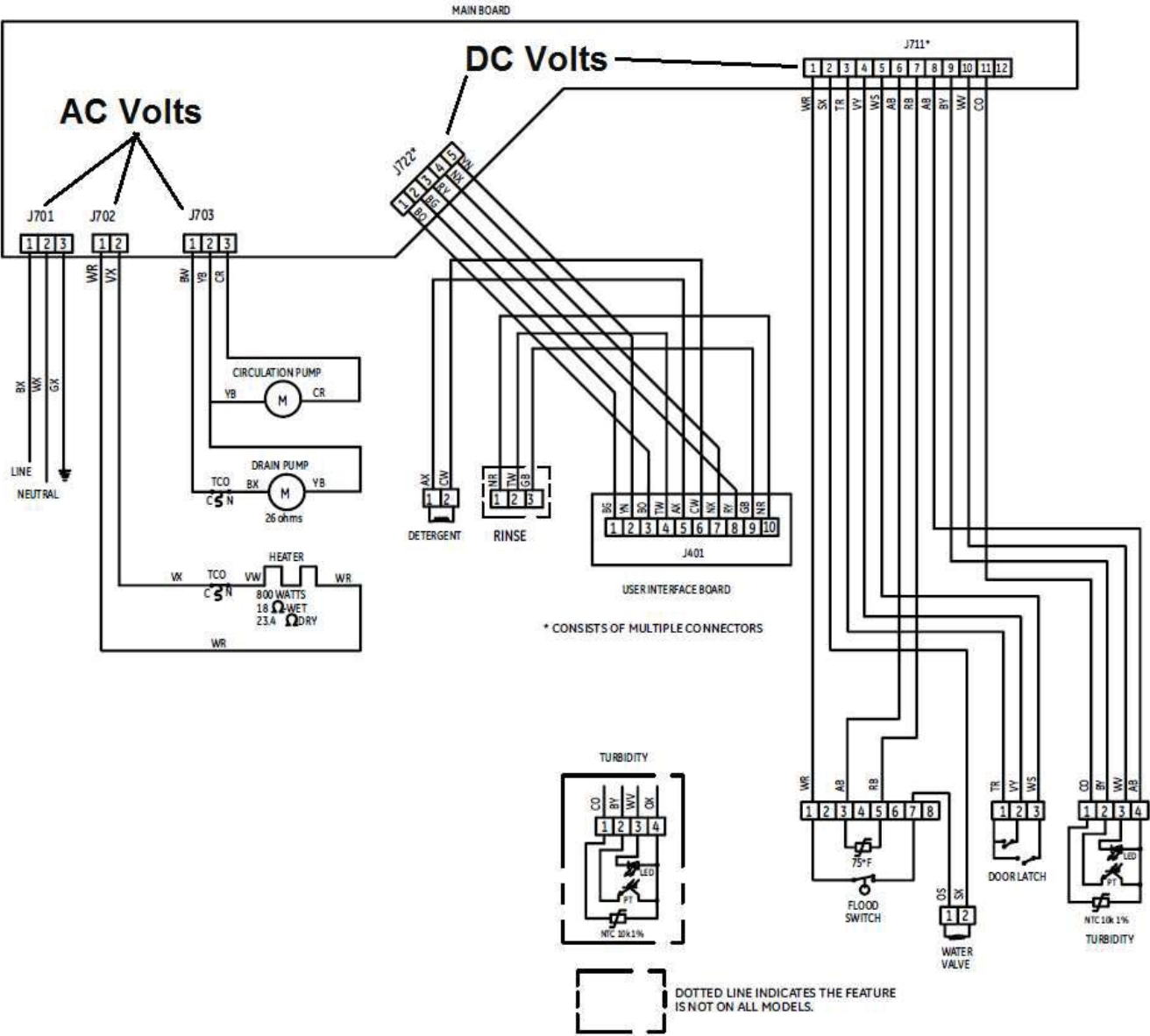
GDF510



GDF520 and GDF540



GDT530 and GDT550



GE Dishwasher Warranty



All warranty service provided by out Factory Service Centers or an authorized Customer Care® technician. To schedule service, visit us on-line at GEAppliances.com, or call 800.GE.CARES (800.432.2737). Please have serial number and model number available when calling for service.

Staple your receipt here.
Proof of the original purchase date is needed to obtain service under the warranty.

For The Period Of:	GE Will Replace:
One Year From the date of the original purchase	Any part of the dishwasher which fails due to a defect in materials or workmanship. During this limited one-year warranty , GE will also provide free of charge , all labor and in-home service to replace the defective part.
Five Years From the date of the original purchase	The dishwasher racks and electronic control boards if they should fail due to a defect in materials or workmanship. During this five-year limited warranty , you will be responsible for any labor or in-home service costs.
Lifetime of Product	The plastic tub or door liner. if it fails to contain water due to a defect in materials or workmanship. During this limited warranty , GE will also provide, free of charge , all labor and in-home service to replace the defective part.

What GE Will Not Cover

- Service trips to your home to teach you how to use the product
- Improper installation, delivery or maintenance
- Replacement of house fuses or resetting of circuit breakers
- Product not accessible to provide required service
- Damage to the product caused by accident, fire, floods or acts of God.
- Failure of the product if it is abused, misused, or used for other than the intended purpose or used commercially
- Incidental or consequential damage caused by possible defects with this appliance.
- Cleaning or servicing of the air gap device in the drain line.
- Damage caused after delivery, including damage from items dropped on the door.

EXCLUSION OF IMPLIED WARRANTIES – Your sole and exclusive remedy is product repair as provided in this Limited Warranty. Any implied warranties, including the implied warranties of merchantability or fitness for a particular purpose, are limited to one year or the shortest period allowed by law.

This warranty is extended to the original purchaser and any succeeding owner for products purchased for home use within the USA. If the product is located in an area where service by a GE Authorized Servicer is not available, you may be responsible for a trip charge or you may be required to bring the product to an Authorized GE Service location for service. Proof of original purchase date is needed to obtain service under the warranty. In Alaska, the warranty excludes the cost of shipping or service calls to your home.

Some states do not allow the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state. To know what your legal rights are, consult your local or state consumer affairs office or your state's Attorney General.

Warrentor: General Electric Company, Louisville, KY 40225